



LIFE+



Environment Policy & Governance

Projects 2009



EUROPEAN
COMMISSION



environment

LIFE+ Environment Policy & Governance 2009: Commission funds 116 innovation projects in 17 countries with €120 million

The European Commission has approved funding for 116 new environmental innovation projects in 17 countries under the LIFE+ Environment Policy & Governance programme 2009. These projects will demonstrate new methods and techniques for dealing with a wide diversity of Europe's environmental problems. The projects are led by 'beneficiaries', or project promoters, based in Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Portugal, Romania, Spain, Sweden and the United Kingdom. They represent a total investment of €278 million, of which the EU will provide some €120 million.

LIFE+ Environment Policy & Governance in 2009

The Environment Policy & Governance strand of LIFE+ supports pilot projects that contribute to the development of innovative policy ideas, technologies, methods and instruments. Of the 308 proposals received, the Commission selected 116 projects for funding from a wide range of public and private sector organisations, a higher percentage than ever before. The winning projects, situated in 17 Member States, represent a total investment of €278 million of which the EU will provide €120 million.

Projects targeting innovation account for the largest share of EU funding (some €20.9 million for 17 projects). The most targeted area in terms of number of projects is waste and natural resources (20 projects supported by €19.3 million), followed by water and innovation (17 projects each). The remaining 63 projects cover various topics including air, chemicals, climate change, energy, environment and health, forests, noise, soil protection, strategic approaches, and the urban environment.

Background

LIFE is the EU's financial instrument supporting environmental and nature conservation projects throughout the EU and in certain non-EU countries. Since 1992, LIFE has co-financed a total of 3 314 projects,

contributing approximately €2.45 billion to the protection of the environment. LIFE+ is the new European financial instrument for the environment with a total budget of €2 143 billion for the period 2007-2013. During this period, the Commission will launch one call for LIFE+ project proposals per year.

LIFE+ Environment Policy & Governance is one of three thematic components under the LIFE programme. The other two components, LIFE+ Nature & Biodiversity and LIFE+ Information & Communication, focus respectively on improving the conservation status of endangered species and habitats; and on disseminating information and raising the profile of environmental issues or providing training and awareness-raising for the prevention of forest fires.

More information on each LIFE+ project is available at: <http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.home&cfid=656029&cftoken=cab1cf8091752717-4430206A-E1CB-E45B-8C0A15178EBFFE27>

It is also possible to contact the relevant national authorities:

<http://ec.europa.eu/environment/life/contact/nationalcontact/index.htm>

Index of Environment Policy & Governance projects selected in 2009

Location	Project number	Title of project
AUSTRIA	LIFE09 ENV/AT/000226 CEMOBIL	CO2-neutral E-mobility in European Cities to Reduce Air Pollutants (PM10, PM2.5, NO2) and Noise Demonstrated in Klagenfurt, Austria
BELGIUM	LIFE09 ENV/BE/000406 Renew4GPP	Enhancing Green Public Procurement using 100% annually renewable innovative resources in gardening products
	LIFE09 ENV/BE/000407 VOPAK-EXPERO3	Using ISCO with perozone for the remediation of a cocktail of organic contaminants at an EX-rated industrial site in operation
	LIFE09 ENV/BE/000409 ATMOSYS	Policy support system for atmospheric pollution hot spots
	LIFE09 ENV/BE/000410 DEMOCOPHESII	Demonstration of a study to coordinate and perform human biomonitoring on a European scale
CYPRUS	LIFE09 ENV/CY/000252 PM3	Particulates monitoring, modelling and management
DENMARK	LIFE09 ENV/DK/000366 Climate Partnerships	Carbon 20 - public private partnerships for climate solutions
	LIFE09 ENV/DK/000367 Composites Waste	Demonstration of a new composites waste recycling process and of the use of the recycled materials in various industries
	LIFE09 ENV/DK/000368 NorthPestClean	Demonstration of alkaline hydrolysis as a new technology for remediation of pesticide contaminated soil and groundwater
ESTONIA	LIFE09 ENV/EE/000227 OSAMAT	Management of environmentally sound recycling of oil-shale ashes into road construction products. Demonstration in Estonia
FINLAND	LIFE09 ENV/FI/000568 VOCless waste water	Abatement of VOC load from waste water treatment in mechanical pulping
	LIFE09 ENV/FI/000569 GISBLOOM	Participatory monitoring, forecasting, control and socio-economic impacts of eutrophication and algal blooms in river basins districts
	LIFE09 ENV/FI/000570 LCA IN LANDSCAPING	Application of LCA for sustainable green cover management using waste derived materials
	LIFE09 ENV/FI/000571 Climforisk	Climate change induced drought effects on forest growth and vulnerability
	LIFE09 ENV/FI/000572 MACEB	Mitigation of Arctic warming by controlling European black carbon emissions
	LIFE09 ENV/FI/000573 INSULATE	Improving energy efficiency of housing stock: impacts on indoor environmental quality and public health in Europe
	LIFE09 ENV/FI/000575 ABSOILS	Sustainable methods and processes to convert abandoned low-quality soils into construction materials
	LIFE09 ENV/FI/000579 REDUST	Best winter maintenance practices to reduce respirable street dust in urban areas - demonstration of best practices, strategy development and implementation
FRANCE	LIFE09 ENV/FR/000591 ECOTRANSFLUX	Transverse Flux Induction Strip Heating Demonstrator, a technology limiting CO ₂ emissions & acid wastes in Steel Industry

Location	Project number	Title of project
FRANCE	LIFE09 ENV/FR/000593 WaterRtoM	Water Research to Market - to speed-up the transfer of water related research outputs to better implement the Water directives
	LIFE09 ENV/FR/000594 IRIS	Demonstration of the industrial viability of a new chemistry to produce eco-friendly solvents from nylon chain wastes
	LIFE09 ENV/FR/000595 AETHER	Demonstration of the reduction of CO ₂ emissions from the production of an innovative class of cements
	LIFE09 ENV/FR/000598 CLIMATE	Changing Living Modes: Acting in our Territory for the Environment
	LIFE09 ENV/FR/000600 GREEN TESTING	Make your Non Destructive Testing greener by new eco-friendly practices and technologies
	LIFE09 ENV/FR/000601 C.C.H.P ENVIR CHALLENGES	Environmental challenges for a rural territory
	LIFE09 ENV/FR/000602 GREENCITY	Green public building platform for the promotion of a Green City
	LIFE09 ENV/FR/000603 Green Waste Plast	Recycling plastics packaging waste excluding bottle
GERMANY	LIFE09 ENV/DE/000011 MY FAVOURITE RIVER	Sustainable use of and identification with the River Neckar in co-operative governance (national, municipal and regional level)
GREECE	LIFE09 ENV/GR/000289 ACCEPT-AIR	Development of A Cost Efficient Policy Tool for reduction of Particulate Matter in AIR
	LIFE09 ENV/GR/000291 PROTEAS	REACH Protocol for Emissions and Accident Scenarios in Supply and Distribution of Fuels and Petrochemical products
	LIFE09 ENV/GR/000294 WASTE-C-CONTROL	Waste management options for greenhouse gas emissions control
	LIFE09 ENV/GR/000296 Adapt2Change	Adapt agricultural production to climate change and limited water supply
	LIFE09 ENV/GR/000297 CARBONTOUR	Strategic Planning Towards Carbon Neutrality in Tourism Accommodation Sector
	LIFE09 ENV/GR/000299 SOL-BRINE	Development of an advanced innovative energy autonomous system for the treatment of brine from sea-water desalination plants
	LIFE09 ENV/GR/000300 eSYMBIOSIS	Development of knowledge-based web services to promote and advance Industrial Symbiosis in Europe
	LIFE09 ENV/GR/000302 SAGE10	Establishment of Impact Assessment Procedure as a tool for the sustainability of agroecosystem: the case of mediterranean olives
	LIFE09 ENV/GR/000304 ROADTIRE	Integration of end-of-life tires in the life cycle of road construction
	LIFE09 ENV/GR/000307 ENERGY-WASTE	Energy exploitation of non-recyclable urban waste in a sustainable waste-to-energy market
ITALY	LIFE09 ENV/IT/000056 WIZ	WaterZe spatial planning: encompass future drinking water management conditions to adapt to climate change
	LIFE09 ENV/IT/000061 P.R.I.M.E.	Posidonia Residues Integrated Management for Eco-sustainability
	LIFE09 ENV/IT/000063 I.MO.S.M.I.D.	Integrated MOdel for Sustainable Management of Mobility in Industrial Districts

Location	Project number	Title of project
ITALY	LIFE09 ENV/IT/000067 SUMFLOWER	Sustainable Management of FLORiculture in WEstern Riviera
	LIFE09 ENV/IT/000068 WASTE-LESS in CHIANTI	Waste Prevention and Reduction in the Chianti Territory
	LIFE09 ENV/IT/000070 N.O.WA.S.T.E.	New Organic Waste Sustainable Treatment Engine: Implementation and Promotion of a System for the household organic waste treatment and domestic composting
	LIFE09 ENV/IT/000074 GAIA	Green Areas Inner-city Agreement "GAIA"
	LIFE09 ENV/IT/000075 AQUA	AQUA. Adoption of Quality water Use in Agro-industry sector
	LIFE09 ENV/IT/000078 ManFor C.BD.	Managing forests for multiple purposes: carbon, biodiversity and socio-economic wellbeing
	LIFE09 ENV/IT/000082 EXPAH	Population Exposure to PAH
	LIFE09 ENV/IT/000087 P.Pro.SPO.T.	Policy and Protection of Sporadic tree species in Tuscany forest
	LIFE09 ENV/IT/000092 OPERA	An integrated assessment methodology to plan local cost-effective air quality policies harmonised with national and European actions
	LIFE09 ENV/IT/000101 Bio.Lea.R.	Full scale use of liquid injection, for innovative control of waste moisture to enhance biogas production in pre-treated waste landfill
	LIFE09 ENV/IT/000102 NADIA	Noise Abatement Demonstrative and Innovative Actions and information to the public
	LIFE09 ENV/IT/000105 ETA-BETA	Environmental Technologies Adopted by small Businesses operating in Entrepreneurial Territorial Areas
	LIFE09 ENV/IT/000107 EFRUD	Emissions Free Refrigerated Urban Distribution
	LIFE09 ENV/IT/000108 EnerGeo	Insulating high strength-controlled porosity geopolymer floor tiles for the mitigation of global warming
	LIFE09 ENV/IT/000111 ELBA	ELBA - Integrated Eco-friendly Mobility Services for People and Goods in Small Islands
	LIFE09 ENV/IT/000115 SUN EAGLE	Endorsement actions for Governance of local environment
	LIFE09 ENV/IT/000117 GREEN INNOVATION	Industrial pilot project for lean integrated process cycle for eco-sustainable production of high performing magnesium components
	LIFE09 ENV/IT/000124 ET IDEA	Environmental TRY for Innovative Dynamic Environmental and energetic Analyses
	LIFE09 ENV/IT/000125 E.N.A.	Eco-Design for the Nautical Sector
	LIFE09 ENV/IT/000136 PALM	Pump And Leakage Management
LIFE09 ENV/IT/000146 T.A.SM.A.C.	Tourism Accessibility in Small Attractive Cities	
LIFE09 ENV/IT/000158 SEDI.PORT.SIL	Recovery of dredged SEDIments of the PORT of Ravenna and SILicon extraction	
LIFE09 ENV/IT/000174 Ultra Crash Treatment	New decisive and clean technology for the long storage of the metallic wires	

Location	Project number	Title of project
ITALY	LIFE09 ENV/IT/000185 MDPATC	New eco-process of superficial treatment of the metal wire products
	LIFE09 ENV/IT/000186 Sludge's Wealth	Ennobling of sludge for energy use and industrial
	LIFE09 ENV/IT/000188 ECO-CLUSTER	Environmental COoperation model for Cluster
	LIFE09 ENV/IT/000200 LAIKA	Local Authorities Improving Kyoto Actions
	LIFE09 ENV/IT/000208 AQUA	Achieving good water QUality status in intensive Ani-mal production areas
	LIFE09 ENV/IT/000214 GAS-OFF	Integrated Strategies for GHG Mitigation in dairy farms
	LIFE09 ENV/IT/000216 H2POWER	H2POWER_Hydrogen in fuel gas
LUXEMBOURG	LIFE09 ENV/LU/000390 ECO2 Tyre Tech	Development and validation of ecologically sustainable tyres through life cycle enhancing technologies
THE NETHERLANDS	LIFE09 ENV/NL/000423 QSIDE	The positive effects of quiet facades and quiet urban areas on traffic noise annoyance and sleep distur-bance
	LIFE09 ENV/NL/000424 ADIOS	Asbestos denaturing with innovative oven systems
	LIFE09 ENV/NL/000426 BLUETEC	Demonstration of the technological, economic and en-vironmental sustainability of a full-scale tidal energy device in an offshore environment
	LIFE09 ENV/NL/000427 SEWEEEX	Sewage energy exchange
PORTUGAL	LIFE09 ENV/PT/000050 Building-SPP	Capacity Building in Sustainable Public Procurement
ROMANIA	LIFE09 ENV/RO/000612 CLEANWATER	Integrated system for protecting and analysing the sta-tus and trends of water threatened by nitrogen pollu-tion
SPAIN	LIFE09 ENV/ES/000431 CREAMAgua	Creation and restoration of aquatic ecosystems for im-provement of water quality and biodiversity in agricul-tural basins
	LIFE09 ENV/ES/000433 CITROFUEL	Demonstration project on a new process for second-generation bio fuel production: bio ethanol from citrus flesh
	LIFE09 ENV/ES/000435 LASERFIRING	Climate Change Adaptation of the Structural Ceramics Industry by Decreasing the Firing Temperature Using Laser Technology
	LIFE09 ENV/ES/000437 Soria CO2Cero	Urban Environmental Corridor CO2Zero, territorial axis for a sustainable culture in the city of Soria
	LIFE09 ENV/ES/000439 MIPOLARE	Post-mined polluted landscapes reclamation by means of valorization of different residues
	LIFE09 ENV/ES/000441 ACCIÓN AGROCLIMÁTICA	Combating climate change through farming: applica-tion of a common evaluation system in the 4 largest agricultural economies of the EU
	LIFE09 ENV/ES/000447 The Green Deserts	The Green Deserts: new planting techniques for tree cultivation in desertified environments to face Climate Change

Location	Project number	Title of project
SPAIN	LIFE09 ENV/ES/000450 BIOENERGY & FIRE PREV.	Contribution of forest biomass generated in the prevention of forest fires in the EU energy strategy
	LIFE09 ENV/ES/000451 VALUVOIL	Demonstration of zero waste cycle by the complete valorization of residues from refining of used vegetal oils
	LIFE09 ENV/ES/000453 MANEV	Evaluation of manure management and treatment technology for environmental protection and sustainable livestock farming in Europe
	LIFE09 ENV/ES/000454 WOODRUB	Utilisation of recovered wood and rubber for alternative composite products
	LIFE09 ENV/ES/000456 AG_UAS	Sustainable water management at regional scale through Airborne Remote Sensing based on Unmanned Aerial Systems (UAS)
	LIFE09 ENV/ES/000457 GREENING BOOKS	Improving the environmental performance of publications from design to lecture!
	LIFE09 ENV/ES/000459 ECOREGA	Green (environmentally friendly) management of cattle farm waste and its repercussion on the GHG emissions
	LIFE09 ENV/ES/000460 ELVISUSTECH	End life vehicles: innovative and sustainable technology for achieving European Directive targets
	LIFE09 ENV/ES/000461 NOISEFREETEX	Demonstrative solutions to reduce noise pollution in industrial areas, using finishing technologies in textile materials
	LIFE09 ENV/ES/000466 EDEA-RENOV	Development of Energy Efficiency in Architecture: Energy Renovation, Innovation and ICTs
	LIFE09 ENV/ES/000467 UFTEC	Substitution of conventional treatment of raw river water by ultrafiltration membrane technology
	LIFE09 ENV/ES/000469 ATLANTIC VINEYARDS	Development & demonstration of a complete system to reduce the use of chemical products in the D.O. RIAS BAIXAS
	LIFE09 ENV/ES/000472 LOS TOLLOS	Project for the comprehensive restoration of the endorheic basin of Los Tollos (El Cuervo and Jerez de la Frontera, Sevilla and Cadiz respectively)
	LIFE09 ENV/ES/000473 CLEANFEED	Prevention of vegetable waste generation and reuse for animal feed in the Autonomous Community of the Basque Country (ACBC)
	LIFE09 ENV/ES/000484 DEMONSTRATION OF KDV TECH	First Implementation Of A New Waste Recovery Technology Converting The Msw From A Representative Urban Region Into Synthetic Diesel Fuel
	LIFE09 ENV/ES/000493 DOMOTIC	Demonstration Of Models for Optimisation of Technologies for Intelligent Construction
	LIFE09 ENV/ES/000499 SustainGraph	Development of Life-Cycle e-Tools for improving the environmental performance of European Graphic SMEs
LIFE09 ENV/ES/000501 RECYCLED-PVB	Design and development of a demonstrative pilot plant for the recycling of polyvinyl butyral (PVB)	
LIFE09 ENV/ES/000505 Radio-electric Governance	Radio-electric Governance: environment and electronic communication policies for deployment of radiocom infrastructures	
LIFE09 ENV/ES/000507 CONNECT	Creation Of A New Network for Electric Cars Technology	

Location	Project number	Title of project
SWEDEN	LIFE09 ENV/SE/000346 GREECIT	Green citizens of Europe - Innovative tools and methods for interactive and co-creative citizens
	LIFE09 ENV/SE/000347 CLIRE	Climate friendly health and care
	LIFE09 ENV/SE/000348 BIOGASSYS	Biogas Skåne – an energy system creating sustainable development by combating climate change
	LIFE09 ENV/SE/000350 CLICC	Climate Living in Cities Concept
	LIFE09 ENV/SE/000351 Mare Purum	Mare Purum - Prevention of Marine Fouling on Commercial Shipping and Leisure Boats with a Non Toxic Method
	LIFE09 ENV/SE/000352 Pure Energy Separator	Pure Energy Separator – Innovative Centrifugal Separator Technology for Energy Recovery and Oily Waste Volume Reduction
	LIFE09 ENV/SE/000355 DYEMOND SOLAR	DYEMOND SOLAR – Innovative Technology for Low Cost Production of Energy Efficient Dye-Sensitized Solar Cells
UNITED KINGDOM	LIFE09 ENV/UK/000021 SSCM4ECAP	Implementing ECAP through a Sustainable Supply Chain Management (SSCM) led approach to Green Public Procurement
	LIFE09 ENV/UK/000023 EDOC	Electronic Duty of Care
	LIFE09 ENV/UK/000024 iGREEN	Improving Guidance on Regulations for Enterprise and the Environment
	LIFE09 ENV/UK/000026 Hydro4LIFE	Hydropower Sustainability Assessment Protocol: EU Assessments, Monitoring, Capacity Development and Outreach

CO₂-neutral E-mobility in European Cities to Reduce Air Pollutants (PM₁₀, PM_{2.5}, NO₂) and Noise Demonstrated in Klagenfurt, Austria

Project background

Nitrogen dioxide (NO₂), particulate matter (PM₁₀ and PM_{2.5}) and polycyclic aromatic hydrocarbons (PAH) are currently the main air pollutants in European cities. Many cities in the EU, including in Austria, are currently unable to meet the Union's limits for PM₁₀ (40 µg/m³ annual mean value) and NO₂ (40 µg/m³ as a mean annual value). In Austria, the maximum allowable readings will be lowered from 35 µg/m³ to 30 µg/m³ from 2012.

An earlier LIFE project, KAPA GS, identified the sources of air pollution in Klagenfurt and defined a series of remediation measures. Traffic was identified as the main polluter, accounting for more than 70% of NO₂ emissions. Whilst significant improvements in PM₁₀ levels have been achieved in recent years, no downward trend has been observed for NO₂. With traffic volume set to continue to increase in the coming years, nitrogen oxide (NO_x) emissions are expected to remain high.

In cities of the size of Klagenfurt, surveys show that noise pollution affects 60% of the population. Some 70% of this noise is generated by traffic. Electric cars create almost no noise, so replacing petrol and diesel cars with electric vehicles will help to reduce noise pollution as well as having a positive impact on the environment and public health.

Project objectives

The aim of the project is to significantly reduce air pollution (PM₁₀, PM_{2.5}, NO_x) and CO₂ emissions in the city centre of Klagenfurt by increasing the share of electric vehicles to 10% of all new registrations.

The project will purchase 64 electric vehicles, which will be made available to the public in order to encourage the acquisition of a further 1 500 electric vehicles by the end of the project in 2015. These vehicles will produce zero emissions as the electric energy will come from renewable sources. A total of 100 electric charging stations will be installed (50 provided by the public sector and 50 from the private sector).

LIFE09 ENV/AT/000226
CEMOBIL



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

Magistrat der Landeshauptstadt Klagenfurt am Wörthersee

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Name of contact person

Wolfgang HAFNER

Duration of project:

60 months (01/09/2010 - 31/08/2015)

Total budget in euro:

5,946,841.00

EC contribution in euro with %:

2,580,921.00 (43.40 %)

Generic theme:

Air quality management and noise abatement

Expected results

- The establishment of future scenarios for air pollution, CO₂-emissions, noise and clean urban transport;
- Lifecycle analysis and carbon footprinting of electric vehicles;
- The development of three public/private partnership (PPP) models for private use of electric vehicles;
- Emissions reductions of 1 900 tonnes of CO₂, 6.0 tonnes of NO_x and 0.25 tonnes of PM per year;
- NO₂-levels in Klagenfurt to fall below 40 µg/m³ (annual mean); and
- Klagenfurt to become a test region for new electric vehicles.

Enhancing Green Public Procurement using 100% annually renewable innovative resources in gardening products

Project background

Gardening is an area that receives little attention in terms of green public procurement (GPP).

For example, polypropylene-based plastic coverings are widely used in the gardening sector but natural alternatives such as jute and coconut are not popular because they are heavy, difficult to handle and visually unappealing.

Project objectives

The basic objective of this project is to enhance green public procurement (GPP) by demonstrating to municipal authorities the ecological advantages of three, high-quality, innovative gardening products based on 100% renewable resources. These "Hortaflex" products are a substitute for conventional mulch and barrier fleeces, which are made from oil-based materials (polypropylene). The life span of these innovative products is estimated at 3-5 years, whereas competitive alternatives have a useful life of 2-3 years. Moreover, the biopolymers used in these new products can be composted at the end of the life cycle, whereas conventional polypropylene needs to be incinerated.

Specific objectives of the project include:

- Testing Hortaflex weed control and demonstrating its environmental advantages and cost-effectiveness in comparison with competitor products;
- Demonstrating the environmental benefits of Hortaflex fertility mats; and
- Performing an LCA on a biopolymer-based weed control system.

Expected results

- The project will demonstrate the environmental and economic benefits of Hortaflex products;
- An installation and maintenance manual will be produced for each product;
- Biodegradable weed control products, fertility solutions and erosion protection will be added to the GPP priority list;
- The first full-scale implementation of the weed control system will take place; and
- An LCA report will be available for the polylactic acid (PLA)-based weed control system, the fertility mats and the erosion system.

LIFE09 ENV/BE/000406
Renew4GPP



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Name of contact person

Dirk DE SAEDELEIR

Duration of project:

60 months (01/09/2010 - 31/08/2015)

Total budget in euro:

1,737,452.00

EC contribution in euro with %:

853,851.00 (49.14 %)

Generic theme:

Eco-labelling – Eco-market – Consumer awareness – Green public procurement

Using ISCO with perozone for the remediation of a cocktail of organic contaminants at an EX-rated industrial site in operation

Project background

Soils, sediments and groundwater are sinks for many contaminating substances. The European Environment Agency (EEA) estimates that there are 300 000-1.5 million contaminated sites in the EU that could be cleaned up (i.e. the source of the contamination is no longer present). The total cost for the clean-up of these sites is estimated at €59-109 billion. However, there are also many sites where the source of pollution is still present, so the actual cost of cleaning-up contaminated sites in Europe will be a multiple of this.

Major sources of contamination are chlorinated aliphatic hydrocarbons (CAH), benzene, toluene, ethylbenzene and xylene (BTEX) and total petroleum hydrocarbons (TPH). These contaminants all have different chemical and physical characteristics and different means of biodegradation. This makes remediation of sites contaminated with a mixture of these chemicals difficult, expensive and time-consuming.

Project objectives

The project's objective is to demonstrate the applicability of an In-Situ Chemical Oxidation (ISCO) technique for the remediation of soil and groundwater contaminated with a cocktail of organic contaminants in very high concentrations at an explosion sensitive site (i.e. an EXrated site).

Specific objectives include:

- To demonstrate the application of ISCO with perozone for the full scale remediation of soil and groundwater contaminated with a mix of different organic components in very high concentrations;
- To develop an extensive health and safety plan defining the necessary safety measures for the use of this technique at EXrated sites;
- To develop procedures for implementing the technique;
- To demonstrate the advantages of the technique in comparison with traditional remediation techniques (fewer carbon dioxide emissions; more time-, cost- and energy-efficient); and
- To evaluate the economic and environmental feasibility of the ISCO with perozone technique.

LIFE09 ENV/BE/000407
VOPAK-EXPERO3



Beneficiary:

Type of beneficiary

International enterprise

Name of beneficiary

Vopak Chemical Terminals Belgium NV

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Name of contact person

Sven Van Assche

Duration of project:

60 months (01/09/2010 - 31/08/2015)

Total budget in euro:

1,341,968.00

EC contribution in euro with %:

654,734.00 (48.79 %)

Generic theme:

Risk assessment – Pollution control

Expected results

- A significant reduction in contaminant concentrations in a relatively short period of time, using only a limited number of injection points;
- A report on the technical and economic feasibility of ISCO using perozone;
- An extensive health and safety plan for the use of ISCO at EXrated sites; and
- Two working procedures for implementing ISCO (one for the execution of the pilot test and one for full scale remediation), allowing transfer to other EXrated plants.

Policy support system for atmospheric pollution hot spots

Project background

Even though air quality in Europe has improved in recent decades, many areas still fail to meet standards set in the European Air Quality Directive (2008/50/EC). This is particularly the case in so-called air pollution hot-spot regions, which are characterised by markedly higher-than-average atmospheric pollution levels, mostly caused by the high density of human activities.

Examples of hot-spots in Europe are the Flanders-Randstad-Ruhr region, the Italian Po Valley, and the urban agglomerations of London, Madrid and Paris. A significant proportion of the population in these areas is exposed to unhealthy levels of pollutants such as particulate matter and nitrogen dioxide.

Project objectives

The objective of this project is to set up, evaluate, and demonstrate an advanced air quality modeling system and associated web-based service, containing novel elements specifically designed for air pollution policy support in hot-spot regions. The system will be based on advanced technology, including prognostic 3-D atmospheric computer models, and will build on results from recent and on-going national and European research projects. The project will cover multiple scales, with a coherent approach to forecasts, assessments, and scenario studies. The objective is not to establish a centralised service for users throughout Europe, but to establish a demonstration project that can be replicated elsewhere.

Expected results

- The main result of the project will be an air pollution modelling system and associated service, which will include an operational daily forecasting system, a re-analysis service (i.e., retrospective simulations) and a scenario tool;
- The system will contain urban/regional (AURORA) and local (ENVI-Met) components. The AURORA model will yield output for relevant gases (e.g. NO₂, benzene, O₃) and particles (PM_{2.5} and its constituent elements, such as elemental carbon, ammonium and sulphates), although the focus will be on pollutants with a local character. The model will contain a module to calculate concentrations near line sources (highways) at a resolution of up to a few tens of metres;

LIFE09 ENV/BE/000409
ATMOSYS



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

Vlaamse Instelling voor Technologisch Onderzoek NV

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Koen DE RIDDER

Duration of project:

40 months (01/09/2010 - 31/12/2013)

Total budget in euro:

2,353,615.00

EC contribution in euro with %:

1,087,488.00 (46.21 %)

Generic theme:

Air quality management and noise abatement

- The ENVI-Met model will yield output for primary emitted gases (e.g. benzene) as well as for gases subject to short-range chemistry (e.g. NO-NO₂-O₃). The targeted accuracy will be of the order of 10% for the most common gases, and 20-30% for the particles.

Demonstration of a study to coordinate and perform human biomonitoring on a European scale

Project background

Human Biological Monitoring (HBM) has long been used in the medical surveillance of workers. Currently it is increasingly used as a tool in environmental research and in health policy development.

The European Environment and Health Strategy, launched in June 2003 by the European Commission as the SCALE initiative, paid particular attention to the potential of HBM.

The technical working group on biomonitoring of children found that while significant resources were provided for the collection of biomarker data in environmental health within the EU, these studies were generally not using the same methodological approach, making it difficult to compare the results. Moreover, differences in capacities and levels of expertise remained high. Some Member States already had national HBM programmes embedded in their policies while others had only carried out some dedicated studies or were still in the process of starting first studies.

Project objectives

The main objective of this project is to demonstrate the feasibility of a harmonised approach to HBM in the EU by implementing a pilot study in 16 Member States and sharing the expertise with five additional countries, which will be adhoc members of this project.

The work will be guided by the external team, COPHES (COntortium to Perform Human biomonitoring on a European Scale), which will prepare guidelines and protocols for all tasks, train beneficiaries, deliver preparatory materials and evaluate the process within the framework of an FP7 Concerted Action that started in December 2009.

Expected results

The common activities by DEMOCOPHESII and COPHES will provide results at EU, Member State and stakeholder levels. This will include:

- At EU level:
 1. The demonstration of the feasibility and usefulness of a harmonised EU approach to HBM;

LIFE09 ENV/BE/000410
DEMOCOPHESII



Beneficiary:

Type of beneficiary

National authority

Name of beneficiary

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Pierre BIOT

Duration of project:

24 months (01/09/2010 – 01/09/2012)

Total budget in euro:

3,419,660.00

EC contribution in euro with %:

1,705,330.00 (49.87 %)

Generic theme:

Risk assessment – Pollution control

2. An EU infrastructure tested in 16 Member States, with the potential to be updated/upgraded to a full-scale EU HBM programme;
 3. A pan-European database for the four selected biomarkers investigated in 3 600 study subjects.
- At Member State level:
 1. A national HBM framework will be developed in 16 Member States;
 2. Sixteen national participating units (a minimum of 80 persons) will be trained;
 3. Sixteen national databases will be established.

Particulates monitoring, modelling and management

Project background

Air quality is a major environmental problem in Europe, especially in urban conglomerates. For Mediterranean and Balkan countries, and Cyprus in particular, the semi-arid climate with dry summers, sparse vegetation, open-cast mines and uncovered soils are conducive to wind entrainment of dust. Long-distance transport from North Africa and the eastern shore of the Mediterranean also has an important impact on air quality.

Dust management measures must take into account the relative importance of these different sources. In Cyprus, the heterogeneity of pollutant sources, the relatively large contribution from natural sources, as well as the impact of transboundary transport pose complexities and difficulties to the formulation of control measures.

Project objectives

This LIFE project aims to support the competent Cypriot authorities in preparing efficient and cost-effective particulate matter (PM) management. For this purpose, state-of-the-art forecasting and scenario analysis software will be used.

The project will enhance data collection and processing capacities through the integration of remote-sensing technologies into the existing monitoring network. Regional modelling and PM10 source apportionment will be combined with stakeholder participation to establish management scenarios and models, incorporating technical and regulatory information as well as socio-economic factors.

A specific objective is to develop, implement and verify a methodology for identifying particulate matter sources to quantify the relative contributions of long-range versus local sources, and natural versus man-made sources. This will be based on monitoring data and emission inventories over three years.

At its conclusion, the project intends to produce a dust management plan. Associating source fractions with direct and indirect control options is expected to greatly improve the efficiency and effectiveness of measures.

LIFE09 ENV/CY/000252
PM3



Beneficiary:

Type of beneficiary

National authority

Name of beneficiary

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Nicolaidis LEANDROS

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

1,294,871.00

EC contribution in euro with %:

629,935.00 (48.65 %)

Generic theme:

Air quality management and noise abatement

Expected results

- Detailed source apportionment for air pollutants in Cyprus, with emphasis on particulates (PM10/2.5);
- An air quality management plan, including guidelines for individual cities, 33 communities and 485 community councils, and emission-control strategies dealing with land-use planning and land-cover management; and
- Public and stakeholder information and involvement.

Carbon 20 - public private partnerships for climate solutions

Project background

At the international level, a range of tools exist to help businesses to reduce their greenhouse gas (GHG) emissions. These tools are, however, primarily used by larger manufacturing businesses. Many smaller businesses (manufacturing and service) are still in a reactive position in terms of climate initiatives – in spite of obvious potential for cost effective GHG reductions. A recent survey of Danish ironmongers showed that a 15-20% reduction in GHG emissions could easily be achieved, and with positive economic impacts. The situation is similar in many other sectors dominated by small and medium-sized enterprises (SMEs).

Several of the participating municipalities in this project have already adopted Climate Action Plans and calculated GHG emissions within their administrative areas. The municipality of Ballerup estimates that more than 60% of its GHG emissions come from business. The corresponding figures in Albertslund and Copenhagen are 40% and 35% respectively.

Project objectives

To mobilise local Public Private Partnerships (PPP) for climate solutions and reduce GHG emissions from private enterprises through PPP.

The specific objectives of the project are:

- To develop, implement and demonstrate effective models for PPPs for climate planning and GHG reductions in private enterprises;
- To develop competences and tools in local administrations to analyse and document climate reduction potentials and to initiate and facilitate climate action initiatives in private businesses;
- To reduce the carbon footprint of at least 100 businesses involved in PPPs by 20%; and
- To analyse and conduct a comparative assessment of the different PPP approaches tested and disseminate the findings and recommendations to European municipalities and business associations.

Expected results

- An SME oriented framework model for PPPs for carbon action at local level that has been developed, applied and demonstrated by seven municipalities from the Danish Green Cities' network;

LIFE09 ENV/DK/000366
Climate Partnerships



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Lars CHRISTENSEN

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

2,114,200.00

EC contribution in euro with %:

1,050,925.00 (49.71 %)

Generic theme:

Reduction of emission of greenhouse gases

- A core team of 30 public officials from the participating municipalities that have been trained in the role of "Municipal Climate Change Agents";
- At least 100 companies and organisations participating in the project and pursuing a binding GHG-reduction target; and
- A 20% reduction of GHG emissions by the participating businesses.

Demonstration of a new composites waste recycling process and of the use of the recycled materials in various industries

Project background

The use of composites in construction material has grown in the last decade and the number of products that benefit from the valuable properties of composites is expanding. The largest single consumer of composite reinforcements is the wind turbine industry, which uses them in rotor blades. However, approximately 20% of the composite fabric used in the manufacture of rotor blades is discarded during the production process.

There are two main problems related to composite waste: firstly, the very large amount of energy embedded in the production of composites – one-third of the cost of producing composites is energy related; and, secondly, environmental problems associated with the disposal of composites in landfill. Approximately 40 000 tonnes/yr of composite waste is deposited in landfill in the EU.

Project objectives

The key objectives of the project are:

- To develop a new waste business concept involving the sourcing and processing of composites waste into quality glass fibre material;
- To demonstrate the use of processed composites waste material in two main industries: the production of asphalt for road-paving; and in the production of exhaust systems and silencers;
- To gather and develop technical and commercial information on the trading of composite waste. This will include information on the processing of waste from different sources and collection systems; and
- To disseminate the technical, environmental and economic results of the project, as well as providing perspectives on possible future uses of the recycled material.

Expected results

The expected results of the project include:

- An operational pilot plant for processing composite waste into different types of products;
- A proven business concept with the potential to reduce energy consumption and related environmental impacts of the production of virgin glass fibre. Each kilogram of recycled glass fibre substituting virgin fibre represents a saving of 48 MJ of energy, as well as 2kg CO₂, 9g SO_x and 3g NO_x;

LIFE09 ENV/DK/000367
Composites Waste



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Jakob THOLSTRUP

Duration of project:

28 months (01/09/2010 - 31/12/2012)

Total budget in euro:

2,045,148.00

EC contribution in euro with %:

1,020,874.00 (49.92 %)

Generic theme:

Industrial waste (including manufacturing)

- The recycling of 1 000 tonnes of waste during the period of the project;
- Agreements with Danish waste producers, which will potentially reduce the disposal of composites in landfill by 2 000 tonnes/yr;
- Recommendations on the most promising applications – both economically and environmentally – and the most effective means of transferring recycling solutions to countries with a reasonable potential for setting up a recycling system.

Demonstration of alkaline hydrolysis as a new technology for remediation of pesticide contaminated soil and groundwater

Project background

In 2006, the European Commission adopted the Soil Thematic Strategy (COM(2006) 231) and a proposal for a Soil Framework Directive (COM(2006) 232). In the Soil Framework Directive it is proposed that Member States should establish an inventory of contaminated sites in Europe and, over time, ensure remediation of these sites, which may pose a risk to human health or the environment.

“Groyne 42” is an example of a contaminated site that poses a risk to human health and the environment. Between 1950 and 1960 this site was used to dispose waste chemicals. Today, it is heavily contaminated with approximately 260 tonnes of mainly organophosphorus pesticides. Since 2006, the Midtjylland region and the Danish Environmental Protection Agency have been conducting research into a novel treatment consisting of enclosure, *in situ* alkaline hydrolysis, and pump-and-treat. Laboratory and small-scale field studies have shown that alkaline hydrolysis can be used to successfully degrade and remove the toxic chemicals from the soil.

Project objectives

The objectives of the NorthPestClean project are:

- To demonstrate, using large-scale pilot studies, that a novel remediation method based on *in situ* alkaline hydrolysis is an effective technology for cleaning pesticide contaminated soil and groundwater;
- To establish a basis for decision-making on full-scale site remediation;
- To use the pilot studies to test the effectiveness of different “enhancement” technologies and to estimate the cost-effectiveness of scaling-up each technology to allow for full-scale site remediation;
- To create awareness among authorities and environmental scientists in EU Member States of this novel remediation technology and its effectiveness in large-scale pilot studies; and
- To compare the remediation potential of this new method with risk assessment-based stop-criteria for the cleanup. By establishing measurable stop-criteria and demonstrating the effectiveness of the new method, the project will provide decision makers with crucial information that will allow them to make a science-based decision on how to progress with site remediation.

LIFE09 ENV/DK/000368
NorthPestClean



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Morten BONDGAARD

Duration of project:

40 months (01/09/2010 – 31/12/2013)

Total budget in euro:

1,596,870.00

EC contribution in euro with %:

798,000.00 (49.97 %)

Generic theme:

Site rehabilitation - Decontamination

Expected results

- The removal of 70-90% of the pesticides at the project site using *in situ* alkaline hydrolysis;
- Measurement of the effect of enhancement methods on mass removal of contaminants; and
- The preparation of a decision-basis report which will show that full-scale remediation using *in situ* alkaline hydrolysis is cost-effective (remediation using traditional technologies is estimated to cost EUR 15-53 million, whereas remediation by *in situ* alkaline hydrolysis has an estimated cost of EUR 6-9 million).

Management of environmentally sound recycling of oil-shale ashes into road construction products. Demonstration in Estonia

Project background

Over 90% of the power supply in Estonia comes from oil shale-fired thermal power plants. Every year some 11 million tonnes of oil shale is burned, producing more than six million tonnes of oil shale ash (OSA). Currently this is mostly disposed of by spreading on land, which causes pollution of millions of cubic metres of rainwater each year.

OSA can be used as a raw material in the construction industry, and could become an interesting and cost-effective replacement for cement and other expensive additives. In Estonia, this could offset the need to import up to 500 million tonnes of natural aggregates from non-renewable sources, usually involving heavy long-distance transport across Europe.

Project objectives

The objective of the project is to show that it is possible to convert OSA into a material that can be used in the construction sector.

Specific objectives of the project include:

- To demonstrate the technical, environmental and economic feasibility of producing aggregates and additives from OSA that have applications in the construction sector;
- To disseminate the results of the project to target groups such as municipalities, road managers, contractors, politicians, legislative authorities, scientists and other professionals and specialists in Europe as well as in Estonia;
- To demonstrate the environmental benefits of materials and applications based on OSA using life-cycle assessments;
- To demonstrate the economic benefits for European companies of using OSA as an additive in certain civil engineering applications.

Expected results

- Given that the production of cement generates close to 0.7 tonnes of CO₂/tonne of cement, it is estimated that the use of OSA could help to reduce CO₂ emissions by at least 4.2 million tonnes/yr;
- Based on rough estimates, the costs of construction in Europe could be reduced by close to €4 billion/yr;

LIFE09 ENV/EE/000227
OSAMAT



Beneficiary:

Type of beneficiary

Public enterprise

Name of beneficiary

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Aleksander POTOTSKI

Duration of project:

52 months (01/09/2010 – 31/12/2014)

Total budget in euro:

2,634,980.00

EC contribution in euro with %:

1,142,490.00 (43.36 %)

Generic theme:

General - Waste management

- The project will provide know-how, information, and guidance on the environmental and economic benefits, and the technical potential of using OSA in civil-engineering applications;
- The project will produce three practical civil-engineering applications of OSA and verify the feasibility of using OSA as a construction material, based on environmental, technical and economic criteria.

Abatement of VOC load from waste water treatment in mechanical pulping

Project background

In 2007, some 43 million tonnes of wood pulp was produced for papermaking in Europe, representing some 20% of the total world supply. The main grades of wood pulp for papermaking in Europe in 2008 were sulphate pulp (62%), mechanical and semi-chemical pulp (33%) and sulphite pulp (5%). Between 1991 and 2007, while pulp production in Europe increased the number of pulp mills in operation declined. There are now approximately 200 mills in Europe with a production capacity of 200 000 tonnes/yr or more. Volatile organic compound (VOC) emissions are between 0.1-1.0 kg/tonne of pulp produced, being highest in the mechanical pulping process.

The data imply that the contribution of mechanical and semi-chemical pulping to total VOC emissions in Europe is significant. VOC emissions from mechanical pulping processes are recognised as the most significant air emission from pulping, accounting for 2-3% of European non-methane VOC emissions.

Project objectives

This project aims to reduce emissions of VOCs from mechanical and semi-chemical pulping processes, thereby reducing their contribution to smog formation and odour problems. The project will specifically target VOCs in wastewater from the pulping process. It will demonstrate the viability of a VOC and odour abatement system in conditions characterised by fumes with high humidity, varying VOC concentrations, low oxygen content, the possible presence of sulphur compounds and large air-flows.

The project will seek to determine how plant design for pulp processing and wastewater treatment can be altered to minimise the VOC load. This would help to create a healthier working environment for pulp mill workers and a cleaner environment for the people living in the vicinity of these plants. The VOC abatement technology will be tested at the Stora Enso Anjala pilot pulp mill in Finland.

Expected results

- The technology to be developed will reduce VOC emissions from mechanical and semi-chemical pulp manufacturing to the target limit values;

LIFE09 ENV/FI/000568
VOCless waste water



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Markku TAPOLA

Duration of project:

36 months (01/10/2010 – 30/09/2013)

Total budget in euro:

1,840,026.00

EC contribution in euro with %:

915,013.00 (49.73 %)

Generic theme:

Air quality management and noise abatement

- If the pilot pulp mills use the pilot VOC control technology, each of them would be expected to reduce their VOC emissions by some 0.5 kg VOC/tonne pulp (i.e. 40-45% reduction in emissions) as a direct result of the project. This would correspond to a reduction of approximately 200 tonnes/yr of VOCs at the Stora Enso Anjala pilot mill. If the technology was adopted at commercial scale in Europe this would correspond to a VOC reduction of approximately 5 000 tonnes/yr; and
- The related odour problem will be eliminated.

Participatory monitoring, forecasting, control and socio-economic impacts of eutrophication and algal blooms in river basins districts

Project background

Eutrophication and algal blooms in lakes, rivers and estuaries constitute a major environmental challenge. This is a particular problem in Finland's inland and coastal waters, which do not currently meet environmental standards despite increasing efforts to reduce nutrient loads in river basins.

Climate change may exacerbate this situation in the future. For example, there could be increased runoff from large areas of cultivated land without vegetative protection during winters. The resulting algal blooms would be a risk to the health of both humans and animals, and would significantly decrease the ecological status and recreational value of water courses.

Effective river basin management plans will be essential to tackling this problem. These plans will need to identify and implement new cost-efficient control and adaptation measures. This requires improved knowledge of risk areas and conditions when algal blooms occur. The consolidation and dissemination of observational data and the public involvement in the planning and implementation phases will also be important elements.

Project objectives

The GISBLOOM project aims to build capacity to ensure better integration of climate change into river basin management plans in Finland. It will demonstrate an integrated model to quantify the effects of different climate-change scenarios to help tackle threats of eutrophication and algal blooms.

The project intends to improve understanding of algal blooms and their responses to management measures in lakes and coastal areas. It will use an innovative combination of nationwide data and models for hydrology, land-use changes and nutrient loads to generate data and real-time forecasts for algal blooming in river basins and around 48 000 Finnish lakes on a daily basis.

A new feature will be a web-based map service and interactive portal (LakeWiki) aimed at facilitating participatory river basin management. This process will inform the selection of measures for river basin management plans in eight pilot areas. Their implementation will be subject to cost-benefit analyses.

LIFE09 ENV/FI/000569
GISBLOOM



Beneficiary:

Type of beneficiary

National authority

Name of beneficiary

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Olli MALVE

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

3,060,856.00

EC contribution in euro with %:

1,503,638.00 (49.12 %)

Generic theme:

Water management at the scale of the river basin

By working to integrate climate change effectively into river basin management plans and to develop a participatory approach, this project will contribute to the achievement of the environmental objectives of the EU Water Framework Directive (2000/60/EC), the Marine Strategy Framework Directive (2008/56/EC) and the Nitrates Directive.

Expected results

- Increased understanding of algal blooming;
- An integrated model for algal bloom forecasting;
- A web-based map service and interactive portal;
- Eight river basin management plans; and
- Cost-benefit analyses of the eight plans.

Application of LCA for sustainable green cover management using waste derived materials

Project background

At present, the landscaping industry has little option but to source much of its green cover materials from arable land, i.e. field top soil. By demonstrating the effectiveness of an environmentally sustainable and economically viable alternative source of green cover materials, this project will seek to significantly reduce negative environmental impacts. The project will contribute to the implementation of EU policy and legislation on waste, in particular the Landfill Directive, as well as legislation on waste treatment (e.g. Regulation No. 1774/2002 laying down health rules concerning animal by-products not intended for human consumption) and the production of growth media (e.g. Regulation No. 2003/2003 Relating to Fertilisers).

Project objectives

- To demonstrate the many possibilities to use waste-derived materials in green cover (particularly in amenity lawn areas) construction and management;
- To conduct a lifecycle assessment (LCA) of the 20 demonstration sites. The LCA results are expected to show that the increased use of recycled materials in landscaping will reduce negative environmental impacts (fewer greenhouse gas emissions, lower energy input, etc.);
- To provide a cost/benefit analysis of the waste-derived green cover production versus conventional processes; and
- To demonstrate the use of competitive, waste-derived green surface materials for urban landscaping.

Expected results

The project is expected to achieve the following results:

- Documented procedures for the establishment and management of three types of amenity lawn areas and the identification of steps at which the recycled products can be used in green cover management;
- A successful demonstration of the use of recycled materials, thereby increasing the use of existing recycled materials by lowering barriers to their use;
- A 20% increase in the share of recycled materials used in landscaping and a reduction in the area of sites without landscaping because of the availability of inexpensive new recycled growing media products;

LIFE09 ENV/FI/000570
LCA IN LANDSCAPING



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Name of contact person

Oiva NIEMELÄINEN

Duration of project:

48 months (01/09/2010 – 31/08/2014)

Total budget in euro:

855,684.00

EC contribution in euro with %:

420,316.00 (50.00 %)

Generic theme:

Agricultural waste

- An LCA-based tool for assessing the environmental impact of waste-derived substrates/green cover surfaces, including software and a database of environmental impacts of materials used in green cover management; and
- A cost-benefit assessment of the use of waste-derived green surfaces.

Climate change induced drought effects on forest growth and vulnerability

Project background

The Fourth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) suggests that in the coming decades regional weather patterns will be altered and extreme weather events will become more commonplace. These changing weather patterns will induce changes in the environment that will affect the growth and vitality of forests.

This project is particularly concerned by how changes in the water cycle will affect forests. Much of the effect of climate change on forests will be dependent on how soils are able to provide water to plants as there will likely be changes in precipitation, transpiration and evaporation. However, there is not yet a clear picture of how these changes will impact on Finnish forests.

Project objectives

This project aims to improve knowledge of how forest growth could change in future by compiling existing data and models. Information compiled by the project will establish a better basis for regional forest management planning in the context of climate change.

The overall objective of the project is to build and demonstrate a system that predicts changes in forest growth and vulnerability in the context of climate change. The system will be used to develop maps and indicators that will support decision-making by public officials and forest managers. The proposed approach builds on long-term forest monitoring data and links these to models of forest productivity. These data will then be linked to simulated variables that determine the susceptibility of forests to abiotic (drought) and biotic (pests/pathogens) damage. The simulations will enable the accurate prediction of changes in the susceptibility to damage of forests.

Expected results

The most important expected results are:

- A map of changes in future forest growth and carbon mitigation potential;
- A map of changes in the susceptibility of forests to drought and selected biotic disturbance (pests/pathogens);
- A map of LAI and biomass distribution in Finland; and

LIFE09 ENV/FI/000571

Climforisk



Beneficiary:

Type of beneficiary

Research institution

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Aleksi LEHTONEN

Duration of project:

48 months (02/01/2011 – 31/12/2014)

Total budget in euro:

1,485,782.00

EC contribution in euro with %:

741,738.00 (49.92 %)

Generic theme:

Forest management – Soil and landscape protection – Desertification prevention

- An Internet-based GIS-application for stakeholders and the general public, which disseminates the most important results of the project.

The results of the project will enable regional forest management to adapt to climate change and help forest decision-makers and managers in their work.

Mitigation of Arctic warming by controlling European black carbon emissions

Project background

Arctic temperatures have increased at almost twice the global average rate over the past 100 years. Warming in the Arctic has been accompanied by an earlier onset of spring melt, a longer melt season and changes in the mass balance of the Greenland ice sheet. The lengthening of the melt season changes the Earth's albedo, a positive feedback effect which leads to further warming.

Reducing the atmospheric burden of CO₂ is the only meaningful way to mitigate climate forcing in the Arctic. However, reducing the concentration of short-lived climate forcing agents, such as black carbon (BC), might be used to slow the process, allowing time for other measures to take effect. The advantage of reducing emissions of these short-lived agents is that the effect on the radiative balance of the atmosphere is noticed much quicker than with long-lived greenhouse gases.

Project objectives

- To demonstrate, using the best available tools, an innovative approach to mitigating warming of the Arctic climate by reducing black carbon (BC) emissions at mid latitudes;
- To identify knowledge gaps and uncertainties in how BC emissions can be linked to radiative forcing in Arctic areas using existing modelling and measurement tools;
- To assess the impact of air quality and climate relevant legislation on BC emissions, their transport to the Arctic, and Arctic warming and how it relates to warming by CO₂; and
- To evaluate an extensive set of mitigation measures targeting BC emissions that could contribute to existing European legislation to increase climate co-benefits of air quality;

Expected results

- An assessment of the impact of current EU legislation on climate and air pollution (CLEC and CLECC Current Legislation scenarios) on future radiative forcing by BC in the Arctic;
- Development of a scenario using additional measures to lower BC emissions in the Northern Hemisphere (Bcadd);

LIFE09 ENV/FI/000572
MACEB



Beneficiary:

Type of beneficiary

National authority

Name of beneficiary

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Name of contact person

Heikki LIHAVAINEN

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

1,643,937.00

EC contribution in euro with %:

820,031.00 (49.90 %)

Generic theme:

Sensitive area management (coastal, protected)

- An evaluation of the potential for technical reduction of BC, i.e. Maximum Technically Feasible Reduction (MTFR);
- Cost estimates of the mitigation measures for the different scenarios (CLEC, CLECC, Bcadd, MTFR);
- An assessment of the contribution of current and future Finnish emissions to BC concentrations in surface air and snow as well as to BC radiative forcing in the Arctic;
- An evaluation of the potential risk associated with future climate change; and
- A priority list of further mitigation actions to reduce BC in the European Union and estimates of their cost with respect to climate impacts in the Arctic.

Improving energy efficiency of housing stock: impacts on indoor environmental quality and public health in Europe

Project background

The 2002 Energy Performance of Buildings Directive (EPBD) is designed to help the EU meet its commitments under the Kyoto agreement, and respond to issues raised in the Green Paper on the security of energy supply. It has a key role to play in promoting the identification and implementation of effective energy savings measures in the building sector, where residential buildings currently account for approximately 40% of energy use.

Project objectives

The project will focus on the assessment of national programmes to improve the energy performance of existing housing stock, such as government supported improvements in thermal insulation, which is seen as a cost-effective and proven measure.

Specific objectives include:

- To develop a common protocol for assessing the impacts of a building's energy performance on indoor environmental quality and health and to establish an integrated approach for the assessment of environmental and health information, including demonstrating the use of relevant environmental and health indicators;
- To demonstrate the effects (both positive and negative) of energy efficiency on Indoor Environment Quality (IEQ) and health in two-to-three different European countries;
- To develop guidelines to support the implementation of related policies; and
- To facilitate transnational networking and the dissemination of information.

Expected results

At national level, the expected results include:

- An annual reduction in energy consumption (Twh/m³/yr) through changes in the U-values of buildings and changes in energy performance related to certification in residential buildings;
- Improvements in thermal conditions, through the optimisation of indoor temperatures and relative humidity;
- Improvement in building structures, reducing the risk of damp/mould growth;
- Improvements in indoor air quality through better ventilation (air exchange rate); and

LIFE09 ENV/FI/000573
INSULATE



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Ulla HAVERINEN-SHAUGHNESSY

Duration of project:

60 months (01/09/2010 – 31/08/2015)

Total budget in euro:

1,847,039.00

EC contribution in euro with %:

923,413.00 (49.99 %)

Generic theme:

Sustainable building

- Improvements in occupants' behaviour, health and wellbeing, including improved cardio-respiratory health, a reduction in allergic diseases and increased thermal comfort.

Sustainable methods and processes to convert abandoned low-quality soils into construction materials

Project background

Construction activity in the metropolitan area of Finland, including the southern Uusimaa region, generates huge amounts of loose, excavated soil. In many cases this is soft clay, which is difficult to use and is usually discarded. The total amount of soil material discarded in Finland is estimated at some 20-30 million tonnes/yr. In Uusimaa alone, the figure is some 4 million tonnes/yr.

One of the main problems associated with this discarded soil is the shortage of available storage space. This is a problem in many densely populated regions in Europe. As a result, soil is being transported over longer and longer distances. In Uusimaa, it is currently transported between 200 and 500 km, which generates more than 2 tonnes of CO₂ per 75 tonne truck load. This could amount to 120 000 tonnes of CO₂/yr. The economic costs are also high, with transport alone costing from €2 million-4 million/yr.

Project objectives

The project aims to demonstrate that it is possible to convert discarded soil into valuable secondary materials with civil-engineering applications. Specifically the project will provide the authorities with the tools and know-how to improve existing legislation so that it is not an obstacle to the appropriate use of secondary materials in construction.

The project will also seek to determine the best possible solutions for the stabilisation of discarded soils, using regionally sourced commercial and by-product additives (such as fly ash).

Finally, it aims to establish the optimum mixing of soil and stabilisation materials for different applications. Evaluation with the help of environmental life-cycle assessment, life-cycle cost assessment and follow-up of the pilots will verify the technical, environmental and economic feasibility.

Expected results

- The project will identify at least four civil-engineering applications for discarded soils and verify the feasibility of using these soils as construction materials;

LIFE09 ENV/FI/000575
ABSOILS



Beneficiary:

Type of beneficiary

International enterprise

Name of beneficiary

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Pentti LAHTINEN

Duration of project:

52 months (01/09/2010 – 31/12/2014)

Total budget in euro:

2,786,988.00

EC contribution in euro with %:

1.312.869.00 (50.00 %)

Generic theme:

Industrial waste (including manufacturing)

- It will develop a model for environmentally-sound and cost effective procedures for using secondary and other materials;
- Landfilling and transport of discarded soils will be reduced and consequently, emissions of greenhouse gases will be reduced and the quality of the landscape and groundwater improved;
- The reduction in transport related greenhouse gas emissions could be some 1.2 million tonnes CO₂/yr;
- Landfill costs in Europe could be reduced by more than €27 billion/yr; and
- The cost of construction in Europe could be reduced by some €3.5 billion/yr.

Best winter maintenance practices to reduce respirable street dust in urban areas - demonstration of best practices, strategy development and implementation

Project background

Street dust is composed of mineral particles from pavement wear and/or from traction sand that accumulate in the street during winter. In spring, when snow and ice melt and surfaces dry out, the particles become airborne and are a major source of urban air pollution (PM10) in sub-arctic regions (e.g. Scandinavia, the Baltic, North America and Japan). In Finland, it is considered to be one of the most problematic air pollutants, causing most of the high pollution episode days in urban areas. City residents are very aware of the street dust problem, which causes annoyance and health problems, especially for those who suffer from respiratory diseases. Because of this, the issue attracts considerable media attention every year. Although the Finnish municipalities have done much to mitigate street dust, these efforts have not been enough to meet the limits required by the EU directive on ambient air quality and cleaner air for Europe (2008/50/EC).

Project objectives

The project aims to find best winter practices in the fields of traction control, dust suppression and street cleaning, and accelerate their implementation in order to reduce levels of respirable street dust (PM10) in urban areas. The project will demonstrate the emissions reduction potential and air quality benefits of these best practices.

Expected results

- The implementation of a comprehensive strategy to reduce the levels of respirable street dust in urban areas by means of better winter maintenance practices;
- An assessment of the costs of implementing this strategy in comparison with current measures;
- Development of a mobile system for measuring emissions of PM10 street dust; and
- A classification of streets according to their dust level as measured by the mobile system. This classification will be used as a quality control tool for mitigating street dust.

LIFE09 ENV/FI/000579
REDUST



Beneficiary:

Type of beneficiary

Local authority

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Duration of project:

48 months (01/01/2011 – 31/12/2014)

Total budget in euro:

1,046,150.00

EC contribution in euro with %:

500,000.00 (47.79 %)

Generic theme:

Air quality management and noise abatement

Transverse Flux Induction Strip Heating Demonstrator, a technology limiting CO₂ emissions & acid wastes in Steel Industry

Project background

The steel industry is an important contributor to the European economy. Steel manufacturers are generally conscious of the need to be environmentally responsible and have already made breakthroughs in developing low carbon emission technologies. For example, ULCOS is a consortium of 48 European companies and organisations from 15 European countries researching Ultra-Low-CO₂ Steelmaking.

However, steelmakers also need to focus on other breakthrough technologies, notably around cold-rolling processes. Cold rolling impacts on the environment in several ways, particularly the generation of acidic wastes, degreaser fumes, oil emissions, wastewater, dust and nitrogen oxides (NO_x).

Continuous annealing of strip gauge steels using high-density electrical induction heating is known to provide technical and environmental improvements in cold-rolling processes. This technology, known as Transverse Flux Induction Heating (TFIH), overcomes the higher costs and inflexibility of earlier continuous annealing processes, but take-up is still limited.

Project objectives

The ECOTRANSFLUX project aims to demonstrate that TFIH technology is mature and can be implemented on new processing lines of steel cold-rolling plants to reduce greenhouse gas (GHG) emissions and acid waste, whilst meeting quality, economic and capacity criteria.

The project will implement a pilot Induction Bright Annealing Line (iBAL) - consisting of a heating section, cooling section and temperature control system - including Ecotransflux high-density inductors. It should demonstrate quick heating cycles and a positive impact on the metallurgic characteristics of the final products.

The project thus expects to convince steelmakers that the technology is an innovative solution that meets their technical, economic and capacity requirements with less environmental impact. The objective is then to see TFIH used in new annealing lines for stainless and carbon steel.

LIFE09 ENV/FR/000591
ECOTRANSFLUX



Beneficiary:

Type of beneficiary

Large enterprise

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Name of contact person

Ivan NOVIKOFF

Duration of project:

25 months (01/09/2010 - 30/09/2012)

Total budget in euro:

646,482.00

EC contribution in euro with %:

316,366.00 (48.94 %)

Generic theme:

Clean technologies

A 20% substitution of current stainless steel processing lines with the demonstrated technology would avoid the consumption of 12 000 tonnes/yr of nitric acid (HNO₃) and 4 000 tonnes/yr of hydrofluoric acid and associated sludge, as well as the emission of 50 000 tonnes/yr of CO₂, 3.2 tonnes/yr of HF (hydrogen fluoride gas) and 4 000 tonnes/yr of NO_x. In the carbon steel industry, penetration of only 2% of the world capacity would save 75 000 tonnes/yr of CO₂.

Expected results

- Demonstration of the technical and economic suitability for steelmaking of the Ecotransflux inductor technology; and
- Use of the technology in new annealing lines for stainless and carbon steel with associated reduction (in the longer term) in acid waste and GHG emissions.

Water Research to Market - to speed-up the transfer of water related research outputs to better implement the Water directives

Project background

The implementation of the Water Framework Directive (WFD) (2000/60/EC), and related directives, such as the Floods Directive (2007/60/EC), is now a priority. It is now known that less than 40% of water bodies will meet the Good Ecological Status requirements set by the WFD by 2015. New knowledge and expertise is needed to introduce the necessary innovations.

However, practitioners - including basin authorities, municipalities, agricultural or industrial users and technology suppliers - are generally 'small or medium-sized' entities and often lack the knowledge, time or resources to make the necessary investments and technological changes.

Secondly, research outputs designed to enable implementation of the WFD are not always ready-to-use because of patent problems or the absence of a market-oriented approach. The typical length of time needed to complete the development cycle in the water sector is 10 to 12 years, well beyond the milestones currently set by the WFD.

Project objectives

The objective of the WaterRtoM project is to reduce the time-lag for transferring excellent research outputs to practitioners in the water-sector down to 3-5 years. It will also investigate the long-term sustainability of the project partnership and its service of facilitating research to market in the water sector.

The beneficiary will develop a Research-to-Market Assessment Strategy (ReMAS) to measure the 'distance' to market of research technologies. This will enable assessment of the potential benefits of emerging tools or processes and the potential costs and risks that might prevent their uptake.

The project will conduct a study of the water sector to assess practitioners' current knowledge and demand, and to identify a long-list of promising research projects in the EU. It will then use ReMAS to assess the outputs of between 20 and 30 of the most promising projects.

The beneficiary expects to assess 8-12 research outputs as 'close-to-implementation'. An individualised

LIFE09 ENV/FR/000593
WaterRtoM



Beneficiary:

Type of beneficiary

NGO-Foundation

Name of beneficiary

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Gilles Neveu

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

799,594.00

EC contribution in euro with %:

399,797.00 (50.00 %)

Generic theme:

Water management at the scale of the river basin

strategy will be made for each of these, making the business case for implementation. A Precursors Marketing Strategy (PMS) will identify sites and companies to take over the innovation.

Expected results

- Individualised business implementation strategies for 8-12 research outputs identified as 'close to market' in the water sector;
- At least half of these outputs taken up by innovators, with the time-lag for transferring research to practice reduced to 3-5 years;
- Improved performance in meeting Good Ecological Status requirements of the WFD; and
- Assessment of the sustainability of the partnership and its services.

Demonstration of the industrial viability of a new chemistry to produce eco-friendly solvents from nylon chain wastes

Project background

The use of solvents is both toxic and emits volatile organic compounds (VOC) into the atmosphere. Among the major consumers of solvents are the paint-stripping, phyto-sanitary chemicals and industrial cleaning and degreasing sectors.

Modern alternatives are available that are both safe and CO₂-efficient, but not necessarily practical for industrial use. Examples are bioesters, which are produced by the chemical reaction between vegetable/animal oils and alcohol (methanol).

Rhodiasolv IRIS is a new alternative produced from the transformation of waste from polyamide-66 (nylon). This safe and easily recycled alternative has been registered and used on a pilot scale since 2008. By avoiding the (previously standard) incineration of the nylon waste, the pilot commercial development saves 25 000 tonnes/yr of CO₂.

However, the existing production process for Rhodiasolv IRIS cannot match the potential demand of several tens of thousands of tonnes. In addition, it generates large quantities of salts and has high energy and raw material requirements.

Project objectives

The IRIS project aims to demonstrate the industrial-scale feasibility of an innovative catalytic chemical process to convert co-products of the polyamide-66 nylon chain into the new eco-friendly and safe solvent Rhodiasolv IRIS, which is readily biodegradable, non-VOC, non-toxic, non-carcinogenic and non-irritant.

The project will develop and implement a pilot continuous prototype and simulation of the new catalytic chemical process. This should demonstrate that it could be practically implemented at industrial scale to produce up to 60 000 tonnes/yr of Rhodiasolv IRIS by 2020.

The catalytic chemical production of the new solvent should save 1.4 tonnes of sulphuric acid per tonne of solvent and 1.3 tonnes of ammonium sulphate per tonne of solvent. It should also re-use 0.8 tonnes of previously incinerated raw material per tonne of solvent, thereby reducing emissions of ammonia (NH₃) and nitrogen oxides (NO_x).

LIFE09 ENV/FR/000594

IRIS



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Name of contact person

Jean-François MOUSSET

Duration of project:

43 months (01/09/2010 - 31/03/2014)

Total budget in euro:

2,106,172.00

EC contribution in euro with %:

1,053,086.00 (50.00 %)

Generic theme:

Clean technologies

Production of the safer end product should lead to the eventual industrial-scale replacement of toxic or carcinogenic solvents such as n-methyl-pyrrolidone, di-chloromethane, trichloroethylene or perchloroethylene, as well as highly volatile and VOC-contributing solvents such as acetone and aromatic solvents. Finally, the new process should allow industries to cut the solvent-production cost by 50%, and thus favour industrial investment in the creation of high-capacity eco-friendly solvent production.

Expected results

- Demonstration of industrial-scale feasibility of eco-friendly solvent production;
- Reduced consumption of sulphuric acid and ammonium sulphate;
- Demonstration of a use for waste from the polyamide-66 nylon chain;
- Reduced GHG emissions; and
- The longer-term replacement of environmentally damaging solvents in industrial use.

Demonstration of the reduction of CO₂ emissions from the production of an innovative class of cements

Project background

After water, concrete is the most widely used material for the construction of housing and infrastructure. The world market for cement - the main material used for making concrete - is in excess of 2 billion tonnes/yr.

However, cement production is one of the most polluting industrial activities regarding greenhouse gases (GHG), accounting for 5% of global CO₂ emissions. Furthermore, the demand from construction industries is constantly increasing, especially in the developing world.

Portland is the most common form of cement. It is made by the thermal treatment - calcination - of ground calcium carbonate (limestone) and clay to form a nodular material called 'clinker', which is then ground to produce cement. Production of Portland cement clinker generates average emissions of 0.8 tonnes of CO₂ per tonne of cement, mostly from the process of heating the limestone, but also from the chemical reactions of the raw materials.

The cement industry has already taken major measures to reduce process-related CO₂ emissions. These have focused on energy optimisation, fuel reduction and fuel replacement. However, these conventional approaches will not be enough to achieve a 20% reduction in cement industry CO₂ emissions from 2005.

Project objectives

The AETHER project intends to show the feasibility of producing a new cement at industrial scale with significantly lower CO₂ emissions compared with conventional Portland cement within existing industrial installations.

The project will demonstrate the performance of a patented new type of clinker that has already been successfully trialed in the lab. The project will produce at least 25 000 tonnes of cement during small-scale industrial research trials that are representative of the construction industry.

The beneficiary expects to demonstrate that the new process will reduce CO₂ emissions by 25-30% and energy consumption by 15% in comparison with Portland cement-production. The testing process will

LIFE09 ENV/FR/000595
AETHER



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Günther WALENTA

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

5,879,780.00

EC contribution in euro with %:

2,306,390.00 (39.23 %)

Generic theme:

Reduction of emission of greenhouse gases

optimise and increase these potentials using alternative raw materials. It will validate the impressive environmental, technical and economic properties of the cement produced.

In the longer-term, the project hopes to contribute to the implementation of the new cement-producing process within Europe, and achievement of the EU's CO₂ reduction commitments post-2012.

Expected results

- Production of at least 25 000 tonnes of the new patented cement clinker;
- Optimisation of the process and end product; and
- A 25-30% reduction in CO₂ emissions and a 15% reduction in energy consumption in comparison with Portland cement.

Changing Living Modes: Acting in our Territory for the Environment

Project background

Combating climate change is a key priority of European environmental policy. In France and across Europe, most climate change actions are undertaken by towns and cities or at regional level.

However, local authorities at municipality or sub-regional levels - such as departments in France or counties in the UK - can also play an important role. They can often bring added value from their specific quality of being large enough to produce real impact, but small enough to make linking directly with the general public more easy.

Currently, there is a noticeable lack of climate change plans in sub-regional government. Yet these are almost certain to become compulsory in the next few years as efforts to achieve climate change targets are stepped up. There is a need to improve knowledge and awareness of good practice in developing effective climate change policies and plans at county level.

Project objectives

The CLIMATE project aims to develop and adopt a territorial climate action plan for Essonne in France. This is expected to provide a positive example to other intermediate public authorities on climate change planning. The general objective is to stimulate a reduction of greenhouse gas (GHG) emissions in Essonne by 2013, aiming at a 25% reduction - compared with 1990 levels - by 2020.

Within the sphere of competencies of the county council, the territorial action plan will focus on encouraging behaviour change amongst local stakeholders, including residents, companies, municipalities and social landlords. It will also specifically introduce carbon accounting into the department's own budget.

The project will aim to raise awareness among local stakeholders and encourage them to take shared action against climate change.

Main areas of work will include organising the governance of eco-business activities, encouraging the use of sustainable house design technologies, stimulating the adoption by citizens of alternatives to car travel,

LIFE09 ENV/FR/000598
CLIMATE



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Laurence CAILLE

Duration of project:

40 months (01/09/2010 - 31/12/2013)

Total budget in euro:

1,567,804.00

EC contribution in euro with %:

783,902.00 (50.00 %)

Generic theme:

Urban design – Quality of life – Transport planning

fighting energy precarity and reducing internal GHG emissions by the county council.

Expected results

- The creation of a territorial climate action plan for Essonne;
- The introduction of carbon accounting in the county council budget;
- The publication of a guide to sustainable town planning; and
- Indications that there has been a reduction in GHG emissions in Essonne by 2013.

Make your Non Destructive Testing greener by new eco-friendly practices and technologies

Project background

Non-destructive testing (NDT) forms an integral part of the manufacturing process for high quality products in the automotive, nuclear and aeronautical sectors. NDT techniques include magnetic particle examination (MPE) and penetrant testing (PT). Both of these procedures possess environmental and health risks from noise, chemical and magnetic pollution, soil contamination and volatile organic compound (VOC) emissions. Other environmental impacts associated with NDT procedures include high consumption of energy and water as well as large volumes of complex waste streams.

Project objectives

The project aims to demonstrate new environmentally-friendly practices and technologies for surface NDT in production and in service applications. Principles of sustainable consumption and production will underpin efforts to improve the environmental footprint of NDT technology by optimising protocols and working methods. Emissions into air, water and soils, as well as the amount of waste produced will be reduced significantly. Consumption of electrical energy and water will be tackled and accident risks (associated with electromagnetic fields and dangerous chemicals) will be addressed. New (versatile and modular) demonstration plants will be developed and tested in a large range of applications. Design factors being tested will include acoustic resonance, IR thermosonic, and guided wave applications.

A stakeholder awareness campaign will promote the project findings to highlight the viable and sustainable potential of innovative and clean NDT technologies that apply resonance acoustic, IR thermosonic and ultrasonic guided wave methods. These will be shown to provide an effective alternative to conventional MPE and PT approaches. Testing platforms for end-users and vocational training will also form part of the project.

Expected results

Demonstration of new eco-friendly NDT practices capable of:

- Reducing waste materials and consumption of energy and chemical inputs by 20-30% compared with conventional PT approaches;

LIFE09 ENV/FR/000600
GREEN TESTING



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Eric CRESCENZO

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

1,008,176.00

EC contribution in euro with %:

470,038.00 (46.62 %)

Generic theme:

Clean technologies

- Reducing magnetic ink consumption and wastes by 20-30% compared with conventional MPE approaches;
- Achieving cost savings of 30% compared with conventional PT and MPE approaches; and
- Implementation of innovative eco-technology replacing MPE and PT resulting in:
 - Elimination of chemical inputs and waste; and
 - Energy savings of up to 90% and cost savings of up to 70%.

Indirect results will include improved working conditions by limiting employee exposure to noise, magnetic fields and chemical agents. The project will also contribute to consolidating legislation linked with the IPPC (Integrated Pollution, Prevention and Control) EC Directive (COM 2007 final).

Environmental challenges for a rural territory

Project background

The Communauté de Haute Provence (CCHP) consists of eight municipalities with a strong sense of identity. The area's environmental policy is dynamic with a number of small pilot projects mainly aimed at securing stakeholder support for environmental actions. Urbanisation trends in CCHP have not tended to be matched by adequate planning to facilitate sustainable development and municipal concerns remain regarding effects on the landscape, atmospheric pollution, water scarcity, rising temperatures and wildfires, rural landscape degradation, high product/energy consumption and waste production.

Project objectives

The LIFE project's objective is to demonstrate the effectiveness of new territorial planning approaches aimed at improving the management of kitchen waste, waste recycling, energy efficiency and protection of soil and water resources. Several inter-related actions will be implemented including:

- Establishing a demonstration building containing environmentally-friendly features such as geothermal air circulation, heating produced by recycled wood logs from a waste reception centre, and photovoltaic panels that will generate electrical energy and heat water;
- Introducing a new method for domestic waste collection, based on using a network of relatively large hidden/buried containers. These will be placed close to a variety of residential areas throughout the territory. In order to reduce transport impacts, a dedicated adapted vehicle will be used to collect waste from these new bins;
- Reorganisation of local waste reception facilities to encourage more public and commercial processing of electronic waste and wood salvage, as well as recycling of edible oils and chemical waste;
- Piloting the use of alternative sewage treatment approaches using 35 reed beds attached to houses.

Expected results

Waste management benefits are expected to include:

- A 25% reduction in final waste volumes as volumes of sorted waste increase by 25%;
- Recovery of wood and its by-products;
- Improved village landscapes;
- Increased production and use of renewable energy;

LIFE09 ENV/FR/000601
C.C.H.P ENVIR CHALLENGES



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Jacques DEPIEDS

Duration of project:

52 months (01/09/2010 - 31/12/2014)

Total budget in euro:

2,051,450.00

EC contribution in euro with %:

609,300.00 (50.00 %)

Generic theme:

General – Waste management

- A 25% reduction in fuel consumption; and
- The construction of 35 new environmentally-friendly sewage treatment facilities.

Green public building platform for the promotion of a Green City

Project background

Energy consumption in EU buildings is increasing and Directive 2002/91/EC aims to develop an energy efficiency certification for all buildings. This European Energy Performance of Buildings Directive (EPBD) sets minimum energy requirements that are to be included in French national legislation by the end of 2010 and implemented by the end of 2012. Potential cost savings by 2010 are estimated at around 22% within the building sector. In addition, Directive 2006/32/EC targets end-use efficiency for energy services and management procedure in buildings such as hospitals, hotels, malls and offices. Moreover, EU Member States are committed to reducing their greenhouse gas emissions between 2008 and 2012 by 8%, compared with 1990 levels.

Project objectives

The objective of the GRENCITY LIFE project is to implement software controlling electricity, water and gas consumption in public buildings. Using 3D models and intelligent meters, the project will monitor consumption in order to manage and audit energy in real time. Detailed data will be available, such as the effect of turning off a computer monitor when absent. A web platform will centralise and control all data for the municipal buildings involved in the project, something which has never previously been attempted for a project of this kind.

Project actions will take in all main public buildings within the target areas of Dijon in France and Vigo in Spain. These will involve a broad range of local stakeholders in improved integrated urban management and applications of the technology will allow users to implement timely measures for reducing energy consumption.

Energy consumption will be expressed in Euros or equivalent CO₂ emissions. This will be easier to understand for many stakeholders and facilitate comparisons of energy efficiency between offices or between different parts of the same building.

In addition, the LIFE project will also assist the monitoring of air quality in Dijon's state schools to facilitate compliance with the forthcoming French "Grenelle 2" legislation.

LIFE09 ENV/FR/000602
GRENCITY



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Fabrice HAIAT

Duration of project:

24 months (01/09/2010 - 31/08/2012)

Total budget in euro:

1,675,528.00

EC contribution in euro with %:

756,088.00 (45.13 %)

Generic theme:

Sustainable building

Expected results

This project will demonstrate that the implementation of an ICT platform for public buildings in numerous municipalities in two different EU countries (France and Spain) may:

- Reduce energy consumption by up to 20% (and equivalent CO₂ emissions by up to 10%);
- Increase overall building efficiency for electricity, water and gas consumption (and reduce equivalent CO₂ emissions); and
- Promote good practices in energy efficiency

Recycling plastics packaging waste excluding bottle

Project background

Municipal waste is the fastest growing waste stream in the EU, with an anticipated increase of 42.5% from 1995 to 2020. In light of this trend, new technologies have been developed to promote and optimise the sorting of mixed products for recycling. These new approaches allow light waste products, which may have previously been considered unsuitable for recycling, to be reused.

Project objectives

The aim of this LIFE project is to demonstrate that waste of various 'blister' or light packaging, normally considered as not economically recyclable, can be re-usable, and that innovative and effective recycling processes exist as alternatives to incineration or landfill.

A pilot installation will be set up using innovative technologies such as granulators and micronisators to process, mill and grind waste products in a cryogenic low temperature atmosphere. Plastics will be recycled into valuable raw material and light re-compounding is forecast to restore their thermoplastic properties. Technology to be applied includes: calendaring of sheets/films (using heated rollers); thermoforming; extrusion; injection and blowing.

Project outcomes are predicted to hold strong transferability potential and help facilitate more recycling of light packaging. A robust set of evaluation and dissemination procedures will be implemented to provide a wide range of waste stakeholders with detailed information about the project's actions and findings.

Expected results

The project will demonstrate the feasibility of cost-effectively recycling light plastic packaging (excluding PET and PEHD bottles and Tetrapak liquid packaging board). It is expected that the project will achieve the following results:

- Recycling of some 4 500 tonnes/yr of targeted plastic waste by the end of the project (1 200 tonnes in 2012, 2 500 tonnes in 2013, and 4 500 tonnes in 2014);
- This result will be built on and annual recycling capacities will rise to 15 000 tonnes/yr by 2020.

LIFE09 ENV/FR/000603
Green Waste Plast



Beneficiary:

Type of beneficiary

Professional organisation

Name of beneficiary

Union des Syndicats des PME du Caoutchouc et de la Plasturgie

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Name of contact person

Bernard MASSAS

Duration of project:

43 months (01/09/2010 - 31/03/2014)

Total budget in euro:

6,462,300.00

EC contribution in euro with %:

1,650,832.00 (25.55 %)

Generic theme:

Packaging and plastic waste

Predicted resource savings from the new approach by the end of the project include:

- Saving 45 000 m³ of water and some 4 000 TOE (tonnes of oil equivalent) of fossil energy; and
- Reducing CO₂ emissions by 9 000 tonnes. Targets for 2020 include saving 150 000 m³ of water and some 14 500 TOE, plus preventing 20 000 tonnes of CO₂ emissions.

Sustainable use of and identification with the River Neckar in co-operative governance (national, municipal and regional level)

Project background

Medium-sized and large rivers flowing through densely populated urban areas typically fall under more than one jurisdiction in Germany. The national level is guardian of waterways development and security, whilst the local municipality has responsibility for local requirements. Their interests can overlap and compete in the management of rivers.

As an example, a local wish for environmentally sound nature restoration measures and attractive riverfronts may be counterproductive to a national level focus on the river's function as a transport route. Unco-ordinated and sometimes contradictory planning leads to significant disadvantages, heavy delays and wasted resources.

The LIFE project targets the Stuttgart section of the river Neckar, which can serve as an example for river management in other European cities. Municipal investments in river improvement urgently need the broad support of citizens and stakeholders to move from planning to implementation. In the project area, the regional Waterways and Shipping Administration maintains and operates 15 lock chambers and 15 weirs.

Project objectives

The project plans to co-ordinate concurrent investment plans at municipal, regional and national level in order to achieve unified, environmentally sustainable and durable river management. It thus aims to ensure appropriate and sustainable maintenance and development of the river Neckar as an important waterway.

To achieve this, the project will establish co-operation routines between national and municipal levels, focusing on environmentally significant dimensions, including river restoration, city planning and local recreation.

The beneficiary will implement the developed concept in two concrete demonstration projects. One will restore the natural river state in Ludwigsburg, making the riverbank accessible and clarifying ownership questions. The other will develop city planning in Remseck to provide a 'green' city centre with attrac-

LIFE09 ENV/DE/000011
MY FAVOURITE RIVER



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

Bundesrepublik Deutschland, vertreten durch Wasser- und Schifffahrtsdirektion Südwest, vertreten durch Wasser- und Schifffahrtsamt Stuttgart

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Name of contact person

Walter BRAUN

Duration of project:

50 months (01/11/2010 - 31/12/2014)

Total budget in euro:

4,420,010.00

EC contribution in euro with %:

2,199,505.00 (49.76 %)

Generic theme:

Water management at the scale of the river basin

tive local recreation options, accessible and attractive natural spaces and reduced traffic.

The project actions will be supported by a marketing campaign highlighting the river as a brand, to boost the identification of the citizens and stakeholders with "MY FAVOURITE RIVER".

Expected results

- A restored river in the city of Ludwigsburg;
- A 'green' city centre for the city of Remseck;
- Appropriate feedback from the demonstration projects for future planning; and
- An example of successful river management between administrative levels that can serve as a European model.

Development of A Cost Efficient Policy Tool for reduction of Particulate Matter in AIR

Project background

Air pollution is still a major problem across the European Union. Despite improvements in air quality, levels of particulate matter (PM), especially fine particulates (PM_{2.5}) remain a concern. Evidence shows that PM_{2.5} has detrimental health effects and the coarse fractions (particulates in the range of 2.5 to 10 µm in diameter) are also problematic. There is a need to reduce exposure of citizens to the high risks from PM_{2.5}. EU directives propose that comprehensive monitoring of ambient levels in urban areas is a necessary first step. A reduction of 20% relative to average concentrations is the target set for all Member States, to be attained between 2010 and 2020. A high number of PM₁₀ ambient concentrations have been recorded in Greece.

Although national air monitoring programmes have been operating to required PM_{2.5} and PM₁₀ levels at several fixed operating stations – specifically nine stations in the areas proposed for study in this project – source apportionment is needed in order to apply targeted measures for concentration reduction. Therefore, more information is needed in order to be able to apply concrete measures targeting emission sources for these particulates.

Project objectives

The project aims to distinguish sources of particulate matter that lead to concentrations exceeding limits set by EU legislation. In order to achieve this objective, a quantitative weighed contribution of emissions caused by human versus natural sources in areas above limit values will be determined. A database will be developed detailing the anthropogenic emission source strength and the naturally emitted primary and secondary materials, and a template will be developed to allow authorities to adopt and evaluate control strategies.

Expected results

- Details of airborne PM levels at three urban locations in Greece: Athens, Thessaloniki and Volos;
- A public software tool for source distribution and profile storage and demonstration;
- Six emission inventories for the three urban areas, with two types of source identification (anthropogenic and natural); and
- Guidelines for effective action plans to reduce PM emissions.

LIFE09 ENV/GR/000289
ACCEPT-AIR



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Name of contact person

Konstantinos ELEFThERiADIS

Duration of project:

48 months (01/09/2010 - 31/08/2014)

Total budget in euro:

1,750,040.00

EC contribution in euro with %:

836,449.00 (47.80 %)

Generic theme:

Air quality management and noise abatement

REACH Protocol for Emissions and Accident Scenarios in Supply and Distribution of Fuels and Petrochemical products

Project background

REACH, the European Community Regulation on chemicals and their safe use (EC 1907/2006), entered into force on 01 June 2007, and will be implemented in different phases until 2018. REACH deals with the **Registration, Evaluation, Authorisation and Restriction of Chemical substances**, and aims at improving the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances.

Dangerous chemical substances can escape into the environment during supply, transportation, storage or handling either during routine operations or as the result of unexpected and disastrous accidents. Such releases may cause immediate or long-term harm to human health and the environment by direct exposure and/or contamination of the air, water, soil, and food chain. The present project addresses the environmental risks associated with the supply and distribution stages of a specific class of chemicals - fuels, lubricants and petrochemicals - in Greece, where full implementation of the REACH protocol requires better co-ordination and guidance of the involved stakeholders, as far as the relevant Health, Safety, and Environmental (HSE) requirements are concerned. The project aims to provide a structured framework that will facilitate REACH implementation and promote the prevention of emissions and accidents that may cause harm to vulnerable environmental receptors and people.

Project objectives

The major objective and main expected result of the project is to develop a protocol of good practices comprising essential HSE management system provisions, procedures, obligations and recommendations to all stakeholders in the management of chemical risks related to the supply and distribution of fuels, petrochemical products and other dangerous substances in Greece. Its ultimate goal is to support the implementation of REACH and to reduce damage to human health and the environment from emissions and accidental releases of such hazardous substances. This will involve the design and implementation of a lifecycle assessment (LCA) for the supply, transportation, handling and loading/unloading stages of a product, taking into account the probability of accidental spills in surface waters, especially close to the Greek coastline, or on land.

LIFE09 ENV/GR/000291
PROTEAS



Beneficiary:

Type of beneficiary

University

Name of beneficiary

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Name of contact person

Georgios PAPADAKIS

Duration of project:

48 months (01/01/2011 - 31/12/2014)

Total budget in euro:

1,745,287.00

EC contribution in euro with %:

808,893.00 (46.35 %)

Generic theme:

Risk assessment – Pollution control

Furthermore, an assessment of the current methods and Best Available Techniques (BATs) used to detect, quantify, monitor, and minimise contamination and risks from emissions and accidents will be made.

Expected results

- Material Safety Data Sheets (MSDSes) will be created for the selected dangerous substances (SelDS) according to the REACH specifications, and new MSDS databases and a search engine for SelDS will be constructed;
- HSE risks will be identified per supply and transportation stage. The number of risks will be quantified as a percentage of all possible risks identified in line with MSDS contents and at least 500 samples are expected to be analysed; and
- Development of the REACH protocol and its validation by 10 key potential users. The protocol will address all lifecycle stages during supply and transportation and will be divided into four sections, for the different modes of transport: road, rail, sea, pipelines.

Waste management options for greenhouse gas emissions control

Project background

Greenhouse gases (GHG) may be emitted at all stages of the life-cycle of a product. They may be produced during the extraction of raw material, transport, manufacturing, use, and final treatment or disposal of materials. By relating the life cycle of materials - from raw materials through to final disposal - to the waste hierarchy, we can see how each level impacts on climate change.

Waste management generates carbon dioxide (CO₂) and methane (CH₄), which are both GHG. Everyday waste - such as kitchen waste, garden waste and paper - and slowly biodegradable organic materials - such as plastic - contain readily biodegradable carbon-based organic matter. The treatment and disposal of these wastes has a direct influence on GHG emissions. By managing the treatment and disposal of solid waste, we are also managing the method by which the carbon will be released back into the environment.

Solid-waste management in Europe mainly produces GHG emissions through the decaying of biodegradable wastes under the airless - anaerobic - conditions in landfills. This process emits about one-third of anthropogenic emissions of CH₄ in the EU. Currently, over 80% of waste in Greece is landfilled, presenting a significant problem with regards the management and control of methane emissions.

Project objectives

The WASTE-C-CONTROL project aims to enable reduced GHG emissions by developing a software tool that will assess, monitor, control and report on the emissions resulting from the entire life cycle of solid-waste management activities.

Using a systematic approach, the project will assess different waste-management options with regards to their GHG emissions. This will enable the project to identify procedures and practical tools within local action plans (LAP) that would reduce GHG emissions from waste-management activities at local level.

The project aims to reduce GHG in the region of Eastern Macedonia and Thrace, the Prefecture of Lesvos and the Prefecture of Chania, all in Greece.

LIFE09 ENV/GR/000294
WASTE-C-CONTROL



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Name of contact person

Nikos GARGOULAS

Duration of project:

24 months (01/10/2010 - 30/09/2012)

Total budget in euro:

2,363,204.00

EC contribution in euro with %:

1,003,788.00 (42.48 %)

Generic theme:

Reduction of emission of greenhouse gases

Expected results

- Software that will act as a decision support tool for the optimisation of solid waste management at regional, local and sectoral levels;
- Local action plans for each administrative region of the project;
- Optimised waste-management practices; and
- Reduced GHG emissions compared with the existing waste management system.

Adapt agricultural production to climate change and limited water supply

Project background

Water shortages and water pollution constitute major environmental threats in the EU that pose a threat to agriculture in particular. Several northern EU Member States face water and soil pollution. Southern Member States are more susceptible to drought and soil degradation. Climate change is only expected to intensify these natural threats.

The agricultural sector will be greatly affected by the imminent decrease in water quantity and quality, but is also one of the major contributors to the problem. Modern-day agriculture accounts for around 70% of global water use. In Greece and Cyprus, up to 85% of total water use is dedicated to agriculture.

The extensive and intensive agricultural use of chemical pesticides and fertilisers is arguably the most important cause of water and soil pollution. Furthermore, current unsustainable agricultural practices are considered to be one of the major driving forces of climate change. Greenhouse gases (GHG) are emitted directly through conventional energy consumption and livestock breeding, and indirectly through land-use effects (such as deforestation).

Project objectives

The overall objective of the project is to demonstrate adaptation of agricultural production to climate change and limited water supply. Specifically, it aims to minimise agricultural water use by introducing a water-recycling method in a closed, fully automated, hydroponic greenhouse system.

The beneficiary will define the scientific and functional parameters of the new system's components: a shallow geothermal power component; a water-recycling unit (concentrator); and a greenhouse. Four prototypes will be constructed in Greece and Cyprus and the system tested for its technical and financial viability. The innovative system will be monitored by remote control.

The aim is to fully recycle the water and also reduce GHG emissions by using the renewable energy source. It also aims to: comply with the requirements of the reformed Common Agricultural Policy (CAP); and minimise water pollution and other environmental effects of agriculture.

LIFE09 ENV/GR/000296
Adapt2Change



Beneficiary:

Type of beneficiary

University

Name of beneficiary

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Name of contact person

Alexandros PAPACHATZIS

Duration of project:

48 months (01/09/2010 - 31/08/2014)

Total budget in euro:

2,576,548.00

EC contribution in euro with %:

1,288,274.00 (50.00 %)

Generic theme:

Water supply – Water quality – Ground water protection

Practical guides will be produced to encourage use of the innovative system in a wide range of environmental conditions. The guides will cover: design and implementation of water recycling systems in greenhouses; the use of shallow geothermal energy in greenhouse agriculture; environmentally friendly agricultural practices and sustainable water use; greenhouse automation and remote control support (RCS); and compliance with the CAP.

Expected results

- Four replicable, prototype horticulture greenhouse systems in Greece and Cyprus;
- Fully recycling and re-using water in the greenhouse system;
- Reduced GHG emissions; and
- The publication of practical guides to designing and implementing the system.

Strategic Planning Towards Carbon Neutrality in Tourism Accommodation Sector

Project background

As a global phenomenon involving the movement of over 800 million people across international boundaries every year, tourism has a major impact on the environment. The World Tourism Organisation provided the first overall estimate of global tourism's carbon footprint in Davos, in October 2007, which was 1 300 mega tonnes of CO₂ equivalent or 5% of total global emissions.

In 2005, transport generated 75% of the CO₂ equivalent emissions from global tourism, with 21% coming from accommodation and its associated activities. This means that the tourism accommodation sector - the focus of this project - accounts for 1% of the total global carbon footprint.

Many enterprises in the accommodation sector have considerable options for reducing their contribution to climate change, which can, simultaneously, also deliver economic benefits.

However, the tourism sector is currently one of the least advanced in terms of adopting measures to reduce its climate impact. It is also highly exposed to changes in the climate, which is, for example, already starting to impact upon the attractiveness of many of the Mediterranean's major resorts. Tourism is a major contributor to the economy of the Region of North Aegean (RNA) and the autonomous government is very interested in its impact on climate change.

Project objectives

The CARBONTOUR project aims to develop an integrated methodology to measure CO₂ equivalent emissions from tourism accommodation facilities and to strategically plan mitigation measures. The main output of the project will be a user-friendly software tool.

The software tool, with an accompanying operation manual, will identify emissions from sources such as energy consumption, water and wastewater management.

The software tool will be optimised through its demonstration in two accommodation units in Greece and Cyprus. Once the tool is finalised, a large-scale dem-

LIFE09 ENV/GR/000297
CARBONTOUR



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

Region of the North Aegean

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Name of contact person

Ioannis LEKKAS

Duration of project:

24 months (01/09/2010 - 31/08/2012)

Total budget in euro:

1,324,139.00

EC contribution in euro with %:

662,069.00 (50.00 %)

Generic theme:

Reduction of emission of greenhouse gases

onstration will be launched, involving 80 accommodation units from the Northern Aegean islands and Cyprus. Strategic plans to mitigate the carbon footprint will be proposed for these accommodation units.

Expected results

- A demonstrated and optimised software tool for determining and evaluating CO₂ equivalent emissions from the tourism-accommodation sector;
- A manual for using the software;
- Quantification of the carbon footprint for the sector and from individual units;
- Quantification of CO₂ reduction targets for the sector in the project areas;
- A mitigation strategy plan for the sector in the RNA and Cyprus.

Development of an advanced innovative energy autonomous system for the treatment of brine from seawater desalination plants

Project background

Exploitation of fresh water resources has led to a shortage of quality fresh water in many low-density European regions. Islands for example, lack fresh water availability and access to renewable energy sources. In South Mediterranean regions an additional problem is saline intrusion, soil contamination and erosion, which further diminish ground water supplies. Desalination plants have been developed to deal with water shortage problems in the Cycladic Islands. This process produces two streams: a clean water product and a reject concentrate, brine, which must be disposed. However, disposal at sea causes significant pressure to aquatic organisms; it is estimated to be twice as salty as seawater. Furthermore, desalination is energy intensive and energy can be expensive for island communities.

Project objectives

The SOL-BRINE project aims to develop a solar-driven brine treatment system in order to eliminate the current practice of brine disposal. The prototype will be solar-powered and comprise of: (i) an evaporator, (ii) a crystalliser, (iii) a compressor and (iv) a dryer. The development of such a system is an innovative approach to finding a feasible solution to brine elimination.

The SOL-BRINE prototype system for brine treatment will produce two by-products;

- Dry salt, which can be easily handled and used commercially; and
- Water- of drinking water quality, to be used for irrigation or other purposes.

Expected results

- The development of a self-sufficient, energy saving system for the total treatment of brine produced from the Tinos seawater desalination plants;
- The system will yield high water recovery (>90%) and a dry salt product with market potential; and
- The project will raise awareness among relevant groups and publish life-cycle assessment reports, engineering reports and feasibility studies.

LIFE09 ENV/GR/000299
SOL-BRINE



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

Municipality of Tinos

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Name of contact person

Simeon ORFANOS

Duration of project:

30 months (01/10/2010 - 31/03/2013)

Total budget in euro:

1,209,689.00

EC contribution in euro with %:

604,844.00 (50.00 %)

Generic theme:

Waste water treatment

Development of knowledge-based web services to promote and advance Industrial Symbiosis in Europe

Project background

Greece produces more than 4.5 million tonnes of residential and commercial urban waste annually, which is equivalent to 440 kg/yr per person, and this is increasing steadily. Thirty-nine existing licensed landfill sites serve 53% of the population, with the remainder served by 1 453 unauthorised sites.

In 2006, municipalities recycled 266 000 tonnes of packaging material and 19.7 tonnes of printed paper. While this is promising, more comprehensive and effective waste management programmes are required. In Viotia, the Prefecture is actively seeking best practice measures to divert waste away from landfills.

Industrial Symbiosis (IS) is an innovative environmental practice that brings together businesses and public sector bodies to significantly improve cross-industry resource efficiency. It enables the commercial trading of materials, energy and water, including wastes. It also involves the sharing of assets, logistics and expertise.

Project objectives

The eSYMBIOSIS project's general objective is to produce a web-based platform for IS, enabling communication between potential partners and offering automated matching of partners according to economic and environmental objectives.

The project intends to consolidate the valuable knowledge base established by numerous national IS programmes to create a new automated service to facilitate the implementation of IS as an environmental policy at all levels.

The tool should increase the participation of public authorities and SMEs in the numerous market-oriented IS activities in Viotia, Greece and Europe. The beneficiary will prepare and train SMEs to engage in IS and to use the platform.

Ultimately, the project expects to reduce both the consumption of natural resources and the quantity of waste going to landfill in Viotia. To give an idea of the potential environmental benefits of IS, a theoretical uptake of 5-8% for all of Greece would save 100-190 kt/yr of CO₂, 250-390 kt/yr of water, divert 90-145 Mt/yr of waste from landfill and prevent the discharge of 9 000-14 000 tonnes of hazardous waste.

LIFE09 ENV/GR/000300
eSYMBIOSIS



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

Viotia Prefecture

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Name of contact person

Klearchos PERGANTAS

Duration of project:

33 months (01/10/2010 - 30/06/2013)

Total budget in euro:

1,763,295.00

EC contribution in euro with %:

878,047.00 (49.80 %)

Generic theme:

Municipal waste (including household and commercial)

Looking to the long-term, the project hopes to generate a critical mass of champions to support the new paradigm and its extended use. A dedicated IS forum will be created to facilitate this. Finally, the project hopes to engage with research and development groups with capabilities to advance the platform's innovative features.

Expected results

- An automated web platform to enable effective matching of companies in IS;
- Training materials in IS for industrial partners;
- New champions for the IS paradigm, through an IS forum;
- Reduced consumption of natural resources in Viotia; and
- Reduced volumes of waste streams disposed to landfill in Viotia.

Establishment of Impact Assessment Procedure as a tool for the sustainability of agroecosystem: the case of mediterranean olives

Project background

Olive groves have been the backbone of the rural economy and ecology in Greece for thousands of years. However, farmers are increasingly abandoning olive groves due to the decline in income from olive products, particularly olive oil.

The environmental risks of extensive olive grove abandonment are high. The demise of olive groves will have negative impacts on local ecosystems, local fauna, soil quality, water balance and biomass formation.

Furthermore, unattended land in Greece is more susceptible to summer fires similar to the 2007 fires that devastated large areas of the Peloponnese. Such land also becomes an easier target for unsustainable development. There are already examples in the South-West Peloponnese of ancient olive groves being replaced by water-thirsty golf courses in order to promote tourism.

The lack of a systematic and focused advisory service is a contributory factor. This encourages both the continuation of unsustainable farming practices and land abandonment, with the associated problems for the environment.

Project objectives

The SAGE10 project aims to develop an environmental impact assessment tool to guide Greek farmers towards the most efficient use of their resources. It thus seeks to promote the long-term sustainability of the agro-ecosystem and economy.

The project will be based around the development of an innovative Impact Assessment Procedure (IAP) for objectively evaluating the potential environmental consequences of proposed agricultural practices. The IAP should be a tool for prioritising activities and achieving ISO14001/EMAS accreditation on farms.

The beneficiary will evaluate and select the technical and environmental parameters of the IAP and train advisors to use the tool in the field. In a pilot scheme, the IAP will be used on 600 olive parcels in three different areas of Greece.

LIFE09 ENV/GR/000302
SAGE10



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Name of contact person

Christina EMMANOUIL

Duration of project:

42 months (01/10/2010 - 31/03/2014)

Total budget in euro:

2,109,442.00

EC contribution in euro with %:

1,052,221.00 (49.88 %)

Generic theme:

Other area – Impact of economic activities

Monitoring of the environmental impacts and crop yields will enable standardisation of the IAP and a validation of the sustainability and cost-efficiency of its implementation. The project plans to propose 50 Environmental Performance Indicators (EPIs) at the level of the farm. It will make the optimised IAP available as software, as well as on paper, with support how to use it and the achievement of environmental accreditation.

Expected results

- An optimised Impact Assessment Procedure (IAP) for the environmental assessment of agricultural practices - available electronically and in print format;
- 50 Environmental Performance Indicators (EPIs) at field level;
- Trained advisors and environmental assessors; and
- The promotion of environmental accreditation for olive groves.

Integration of end-of-life tires in the life cycle of road construction

Project background

End-of-life tyres represent a serious disposal and environmental problem, which can cause several human health hazards. Both European and Greek legislation have already banned landfilling of tyres.

Tyres are a complex product comprising many high-technology materials from the metallurgical, textile and chemical industries, including synthetic and natural rubber and additives such as mineral oil and reinforcing fillers. Some of these materials can be hard to break down, recycle or re-use at the end-of-life of the tyre.

The most significant technical problem for recycling tyres is the three-dimensional network of sulphur polymer molecules in its chemical structure. These are created during the process of vulcanisation in which rubber is made more durable and less sticky by the addition of sulphur.

The problem is that the reaction of sulphur and rubber molecules is thermodynamically irreversible. It is therefore difficult to remove the sulphur binds and devulcanise the rubber compound to produce a valuable recycled material.

Project objectives

The objective of the ROADTIRE project is to demonstrate an innovative use for recycled vulcanised rubber from end-of-life (EOL) tyres in road construction. This ultimately aims to demonstrate a market for EOL-tyres in civil engineering and thus reduce the amount of collected EOL-tyres being stockpiled or sent for uses with a higher carbon footprint.

The project will conduct a survey and examine all existing civil engineering uses of rubberised - vulcanised or de-vulcanised - asphalt systems. It will identify which can best be applied to the project area in Lamia in the Region of Sterea Ellada, Greece where no such concepts exist yet.

The project will then lay a pilot road surface made using vulcanised rubberised asphalt from EOL-tyres. Over 6 000m² of a high-speed urban road in Lamia will be covered by a 5 cm upper circulation layer made of the demonstration material.

LIFE09 ENV/GR/000304
ROADTIRE



Beneficiary:

Type of beneficiary

University

Name of beneficiary

Aristotle University of Thessaloniki

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Name of contact person

Avraam KARAGIANNIDIS

Duration of project:

24 months (10/09/2010 - 09/09/2012)

Total budget in euro:

1,480,997.00

EC contribution in euro with %:

733,851.00 (49.55 %)

Generic theme:

General – Waste management

It is expected that the normal use of this pilot road will successfully demonstrate an increased life span of the road surface, reduced noise pollution and increased safety in wet road conditions, as well as encouraging civil engineering and tyre-recycling companies to develop this use for vulcanised rubber and avoid the more environmentally damaging alternatives. The project should also lead to modifications in the regulations for public works.

Expected results

The project expects to:

- Demonstrate the civil engineering application of EOL-tyres;

This will lead to:

- A reduced environmental impact from EOL-tyres; and
- Improved environmental performance from public works.

Energy exploitation of non-recyclable urban waste in a sustainable waste-to-energy market

Project background

There have been a lot of efforts to increase the recycling of urban waste. However, this waste stream has a non-recyclable fraction, which is still disposed in landfills. Waste landfills are a noteworthy contributor to greenhouse gas (GHG) emissions, since methane (CH₄) and carbon dioxide (CO₂) are naturally produced during waste deterioration.

However, this non-recyclable fraction of urban waste does have a potential use: electricity can be generated from it by gasification. This technique converts the carbon-based content of waste streams into carbon monoxide and hydrogen by reacting it at high temperatures with a controlled amount of oxygen and/or steam. The resulting 'synthesis gas' is a fuel.

Using gasification to extract renewable energy from different types of organic waste is a much more environmentally-friendly waste management option than sending it to landfill. The thermal utilisation of non-hazardous bio-residues and waste streams could be a key element in an integrated waste management concept to satisfy the EU's Thematic Strategy on Waste (COM (2005) 666 Final).

Project objectives

The LIFE ENERGY-WASTE project aims to demonstrate an advanced gasification concept for the energy exploitation of the non-recyclable stream of a modern recycling factory. It hopes to show that this approach will reduce the overall GHG emissions from urban waste streams.

The project will study, develop and implement a specific demonstration logistics management scheme to exploit the thermal content of non-recyclable urban waste from Epana's recycling factory, which has a capacity of 100 000 tonnes/yr.

The process will start with the production, characterisation and standardisation of Refuse-Derived Fuel and Solid Recovered Fuel (RDF/SDF) by mechanical treatment of the residual urban waste from the recycling plant. The classified RDF/SRF will then be gasified to produce a combustible gas which will be exploitable in the existing network for electricity generation from biogas in Ano Liosia.

LIFE09 ENV/GR/000307
ENERGY-WASTE



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

Epana S.A.

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Name of contact person

Athanasios KATRIS

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

1,923,079.00

EC contribution in euro with %:

899,789.00 (46.79 %)

Generic theme:

Municipal waste (including household and commercial)

The gasification unit developed will be tested for a significant length of time to demonstrate the successful application of the RDF/SRF-energy-exploitation technology in Greece. The environmental impact, sustainability and replication potential of the process will be assessed. The project aims to show that the process reduces the CO₂ emissions and general environmental impact of waste disposal of urban waste streams.

Expected results

- Design and implementation of a gasification unit to exploit energy from the non-recyclable waste fraction in Greece;
- Demonstration of the environmental benefits of waste energy exploitation via gasification; and
- Demonstration of the sustainability and transferability of the gasification process.

WaterIze spatial planning: encompass future drinking water management conditions to adapt to climate change

Project background

In southern Europe the impact of climate change increasingly affects water resources, drinking water availability and future drinking water management. Drinking water demand is closely linked to increased urbanisation.

The water crisis must be dealt with in the short term to ensure the availability of water; however, long-term adaptation policies must also be developed.

The involvement of local authorities and citizens in water management planning and water governance can greatly influence development plans and help businesses gain a more sustainable perspective.

Project objectives

The overall goal of the WaterIze 'WIZ' spatial planning project is to integrate the protection and sustainable management of water in urban planning processes and local policy areas.

The project aims to incorporate long term analysis of drinking water management in urban spatial planning by creating a platform for local authorities to be involved in decision-making processes.

The project will contribute to the integration of the European Framework for Adapting to Climate Change into other local and EU regulations, particularly in relation to future water management conditions. A network of the European projects within the water technology platform will be created and transnational co-operation on water management increased.

The project will involve citizens and SMEs in water governance: the aim is to increase public participation and understanding by the institutionalisation of drinking water management and to promote awareness.

Expected main results include:

- Implementation of a demonstration platform and institutionalisation of the relevant processes;
- Project services (integrating and projecting existing information about drinking water demand trends, infrastructure capacity, investment costs, and climate change impacts on water resources) to be made available to at least 10 local planning authorities;

LIFE09 ENV/IT/000056

WIZ



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

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Name of contact person

Oberdan CEI

Duration of project:

36 months (01/09/2010 - 30/08/2013)

Total budget in euro:

1,896,540.00

EC contribution in euro with %:

942,370.00 (49.69 %)

Generic theme:

Water supply – Water quality – Ground water protection

- A possible 50-80 authorisation procedures will be examined according to the project approach over the 18-month period that the demonstration platform will be active;
- During an average decision process, five-to-10 people will approach (at different levels) the project themes i.e., examining climate change adaptation issues, pressure on water resources, demand management;
- The WIZ service for citizens, professionals and organisations will be made available online, with a view to achieving an average 20-50 users/day over the 18-month period;
- Web-enabled and mobile devices will be integrated with widely-used services (e.g. Google Earth) to enlarge the demonstration arena for both citizens and enterprises; and
- Knowledge on the importance of a reliable method of water supply management will be disseminated to institutions at a local level.

Posidonia Residues Integrated Management for Eco-sustainability

Project background

The endemic Mediterranean seagrass species, *Posidonia oceanica*, forms dense and extensive underwater meadows with leaves that can reach 1m in height. These rare seagrass meadows (listed as a priority for conservation according to the EU Habitats Directive) provide important ecological functions and services and support a highly diverse community, including species of economic interest. During their life-cycle, the *Posidonia* meadows decompose and this residue is washed ashore.

Every year in the many coastal communities affected by the phenomenon, thousands of tonnes of beached *Posidonia oceanica* are collected and disposed of in landfill sites. The residues also cause a disagreeable smell as a result of the putrefaction processes. As well as the cost of cleaning and disposal for coastal communities, another problem is the lack of guidelines on how to manage this biomass material. Moreover, the use of heavy machinery (such as tractors) to remove seagrass residues along sandy coastlines can cause considerable damage to coastal ecosystems and can negatively impact the sedimentary balance of small beaches or add to coastal erosion.

Project objectives

The project aims to develop the potential reuse of *Posidonia oceanica* residues by developing an integrated management system capable of combining environmental protection with the waste biomass management and the reuse of material for agriculture.

This work will involve all concerned stakeholders including: local authorities responsible for coastal areas, bathing establishment directors, beach users, municipal waste disposal services, compost producers and agriculture companies. The project will also aim to demonstrate that rather than being an environmental problem, the management of beached seagrass residues can become a useful resource for agriculture.

Expected results

- The establishment of an eco-sustainable management model for the beached *Posidonia* residues according to the different conditions of the marine-coastal ecosystem. This could allow the reduction of the economic and environmental costs of their removal from the beaches affected by the problem;

LIFE09 ENV/IT/000061

P.R.I.M.E.



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Name of contact person

Pietro SANTAMARIA

Duration of project:

36 months (01/09/2010 - 01/09/2013)

Total budget in euro:

1,152,917.00

EC contribution in euro with %:

568,455.00 (49.31%)

Generic theme:

Sensitive area management (coastal, protected)

- To rationalise, from an environmental and management point-of-view, the interventions along the coastlines according to specific guidelines;
- The implementation of a pre-processing eco-sustainable process to obtain material suitable for high-quality green compost production;
- A reduction of the costs borne by the local coastal municipalities for the disposal of the removed residues;
- An increase in separate waste collection with new materials to be reused;
- A reduction of runoff and carbon dioxide emissions through the reduction in the amount of organic material going to landfill; and
- A reduction in the amount of peat used in horticulture and an increase in the organic matter content in the soils.

Integrated MOdel for Sustainable Management of Mobility in Industrial Districts

Project background

Transport and energy were selected as national priority areas for action in 2009 by the Italian Ministry for the Environment.

Commuting between home and work, especially in industrial areas, generally offers good opportunities for improvements in efficiency in mobility management (governance). Inadequate public transport often means that employees in these industrial districts have no choice but to use their own private vehicles to travel to and from work. This private traffic, together with commercial traffic during rush hour, provokes serious congestion problems in the access routes to industrial areas.

This road traffic also affects air quality, road safety, noise and carbon dioxide emissions, and leads to increased economic and social costs for individuals, businesses and the community.

The industrial district of the municipality of Correggio was identified as a suitable location for demonstrating the project's proposed Integrated Model for Sustainable Management of Mobility in Industrial Districts (IMOS-MID).

Project objectives

The project aims to identify and define an innovative integrated governance model inspired by criteria for sustainable mobility. The idea is to try to satisfy the growing demand for supplementary LPT (Local Public Transport) services and to reduce the use of private vehicles. Moreover, a key aspect of the project will be to bring together transport and energy matters with a system capable of exploiting energy produced from renewable sources within a trial industrial district.

Overall, the I.M.O.S.M.I.D. model will focus on

- Developing a co-ordinating body (District Mobility Management Office) to organise, plan, programme and promote services within the trial district;
- Introducing car sharing services for transfer between home and work. The aim is to discourage the use of private motor vehicles and encourage the use of electric vehicles, powered by renewable energy produced within the same district; and
- Launching innovative services (transport on call) for transfer between home and work, using hybrid buses (driven by electricity and methane/clean diesel).

LIFE09 ENV/IT/000063
I.M.O.S.M.I.D.



Beneficiary:

Type of beneficiary

Local authority

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Name of contact person

Pietro GENTILI

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

2,166,566.00

EC contribution in euro with %:

820,783.00 (37.88 %)

Generic theme:

Urban design – Quality of life – Transport planning

An additional benefit will be the opening of an educational/demonstration power station that generates energy from renewable sources.

Expected results

- On a strategic level, a main result will be the development of an innovative mobility management model for functional urban areas. This will be disseminated at local level, within the other nine provinces of the Emilia-Romagna region, nationally and internationally;
- The trials in the Correggio district will aid the implementation of the "Protocol of Intent for Air Quality" tackling environmental pollution, which has been signed by local government agencies and business associations in the Reggio Emilia province. This protocol includes the promotion of integrated transport systems.

Sustainable Management of Floriculture in Western Riviera

Project background

The region of Liguria has more than 12 000 floriculture nurseries occupying 6 000 ha of farm land. Nursery gardening in Liguria represents 75% of the region's agricultural production and is mainly based on the cultivation of cut flowers and ornamental plants for floristry and for interiors and gardens. In 2001, the Liguria western riviera agricultural and nursery gardening district was established, extending the land covered by a further 3 300 ha.

Floricultural activities have a strong impact on the land and often generate environmental problems, related to the use of natural resources and the release of pollutants in water, soil and the atmosphere. Ornamental plants, for example, raised in greenhouses or outdoors, are characterised by a fast growth, requiring a constant supply of nutrients and water. The amounts of water supplied are often far in excess of what the plant actually needs and this surplus often implies significant waste and may spread fertilisers and phytosanitary substances in the soil and superficial water bodies. The presence of nutrients such as nitrogen or phosphorous in surface waters is also often associated with problems of eutrophication. Water quality has also been compromised in some project areas by nitrates pollution. Moreover, the use of water for irrigation by the garden nurseries is usually not efficient and it generates conflicts with other parts of the economy, especially tourism during the summer.

Project objectives

The project's aim is to create a sustainable management system for floriculture and ornamental horticulture, embracing social, economic and environmental sectors and paying particular attention to some key environmental aspects: resource consumption, waste and land use.

The project will reduce the main environmental impacts of floricultural activities by improving efficiency, while also respecting economic viability. SMEs operating in the floriculture and ornamental horticulture sectors will be assisted in the application of best available techniques, innovative technologies and practices, to ensure compliance with national and EU environmental regulations. In line with the EU's "Gothenburg's

LIFE09 ENV/IT/000067
SUMFLOWER



Beneficiary:

Type of beneficiary

University

Name of beneficiary

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Name of contact person

Mauro Giorgio MARIOTTI

Duration of project:

36 months (01/09/2010 – 01/09/2013)

Total budget in euro:

1,769,416.00

EC contribution in euro with %:

870,922.00 (49.22 %)

Generic theme:

Integrated environment management

strategy" (Gothenburg European Council, June 2001), a strategy for sustainable development opportunities and benefits deriving from sustainable floriculture will be demonstrated by quantitative measures. The project will also test and improve the current methods of certification to provide floricultural products with an added value both in terms of quality and sustainability.

Expected results

- The project will produce a set of guidelines and best practices for the sustainable management of floriculture. This will improve knowledge of environmental impacts among sector operators; and
- A multifunctional demonstrative advanced system of nurseries will be implemented for the Liguria district as a model for the entire flower industry.

Waste Prevention and Reduction in the Chianti Territory

Project background

As European society has grown wealthier it has generated more and more waste. In the European Union alone, 1.3 billion tonnes of waste are thrown away annually - some 40 million tonnes of which is hazardous. The EU's approach to waste management is based on waste prevention and reduction. It should be a primary measure, before the reuse of waste as material or energy or final disposal.

The province of Florence, with an average per capita waste production of 669 kg/inhabitant/yr in 2007, is among the areas of Europe with the highest waste production intensity. (The EU-27 national average is 546 kg/inhabitant/yr and the European average 522 kg/inhabitant/yr).

Project objectives

The project aims to contribute to European and national policies on waste prevention and sustainable consumption through the implementation and monitoring of an integrated waste prevention and reduction programme for Chianti in Florence. By selecting an internationally known district, the aim is to provide Member States with an easily identifiable model for the establishment of their own waste prevention programmes by December 2013 (as required by the EU Waste Framework Directive, Art. 29).

The project aims to involve a broad range of Italian stakeholders, including the general public, to demonstrate that waste prevention, reduction and sustainable development can be effectively achieved by means of integrated and participatory approaches and concrete commitments, actions and tools.

A specific objective is the implementation of the provincial waste prevention and reduction plan within Chianti. (The plan was defined within the Local Agenda 21 of the province of Florence and approved by the provincial council in December 2007)

Expected results

The project expects to achieve the following results:

- To actively involve at least 100 local stakeholders in the implementation of the waste prevention and reduction plan for Chianti;

LIFE09 ENV/IT/000068
WASTE-LESS in CHIANTI



Beneficiary:

Type of beneficiary

Local authority

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Name of contact person

Emilio GALANTI

Duration of project:

40 months (01/09/2010 - 31/12/2013)

Total budget in euro:

1,075,905.00

EC contribution in euro with %:

504,671.00 (46.91 %)

Generic theme:

Municipal waste (including household and commercial)

- To reduce municipal waste sent to landfill or incineration by 15% in five years;
- To reduce municipal waste production by 30 kg/inhabitant by the end of 2013, and by a further 30 kg/inhabitant by the end of 2016, eventually achieving a reduction of 100 kg/inhabitant by 2020 – or some 15% – compared with 2007 figures; and
- To help lower CO₂ emissions in Chianti.

New Organic Waste Sustainable Treatment Engine: Implementation and Promotion of a System for the household organic waste treatment and domestic composting

Project background

There's a growing need to encourage a 'recycling' culture among Italian households, especially in southern Italy, to better tackle environmental and sanitary problems linked with unsatisfactory waste management systems and policies. This project therefore targeted the development of more efficient treatment of domestic organic waste.

Project objectives

The project's overall objectives are to develop and test, in small urban areas, an innovative system for the treatment and composting of domestic organic waste.

Using environmentally-friendly materials, the system will target the elimination of toxic emissions and also promote energy savings. The project is targeted principally at local public authorities responsible for the administration of waste management systems.

Expected results

With widespread promotion, the scheme aims to achieve:

- Organic waste recycling of about 30%;
- Re-use of this waste;
- Product profitability; and
- Social benefits, including jobs (work placement), environmental (no emissions) and a reduction of management costs e.g., a reduction of at least 70% in waste transportation and emptying of bins.

It is expected that the new system will be adopted into guidelines for local waste management plans for the municipalities involved.

LIFE09 ENV/IT/000070
N.O.W.A.S.T.E.



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Giuseppe LO BIANCO

Duration of project:

40 months (01/09/2010 - 31/12/2013)

Total budget in euro:

2,119,263.00

EC contribution in euro with %:

1,058,631.00 (49.95 %)

Generic theme:

Municipal waste (including household and commercial)

Green Areas Inner-city Agreement "GAIA"

Project background

Climate change is one of the most challenging environmental, social and economic threats faced by society. In some European urban areas the negative impacts of this environmental problem are already emerging with increasing average temperatures and concentration of air pollutants. As the global urban population has doubled over the last 50 years, it is estimated that two-thirds of the world's population will be living in cities by 2030. Therefore, the need to address climate change in an urban context will assume a more important role in the overall strategy to tackle climate change.

Project objectives

The project aims to tackle two environmental problems through an integrated policy: climate change (both mitigation and adaptation effects of urban forestation) and air quality (the depuration potential of plants).

Specifically, the project plans to develop a public-private partnership model for urban forestation through the adoption of the "green areas inner-city agreement" (GAIA). This is expected to include three specific protocols for green urban areas covering management, monitoring and mapping.

The three protocols aim to:

- Develop a model of environmental governance merging mitigation and adaptation effects of climate change (and how this influences) the enhancement of air quality;
- Demonstrate the feasibility of local policies tackling climate change through the development and subscription of a partnership, between private and public bodies, for the management of green urban areas;
- Initiate a process to assist public administrations in promoting co-responsibility by an innovative management tool that fosters tree planting in urban areas as a compensatory action for the construction of infrastructure;
- Define a common and replicable methodology to calculate the greenhouse gases and air pollutants sequestration potential of trees; and
- Create an instrument for offsetting carbon emissions that local businesses can apply.

LIFE09 ENV/IT/000074

GAIA



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Name of contact person

Roberto DIOLAITI

Duration of project:

31 months (10/10/2010 - 30/04/2013)

Total budget in euro:

1,202,000.00

EC contribution in euro with %:

600,000.00 (49.92 %)

Generic theme:

Urban design – Quality of life – Transport planning

Expected results

- The engagement of the local community, and in particular of the industrial sector, in supporting green urban areas policy;
- Lower CO₂ emissions in urban areas through the sequestration capacity of trees and plants;
- An increase in air quality caused by the depuration effect of tree and plants: Every tree can remove 2 kg of PM10 (particulate matter) and 0.7 kg of ozone;
- Increased resilience to climate change in urban ecosystems: tree foliage can reduce the "urban heat island effect" by mitigating the temperature by 4.5 °C;
- Increased knowledge about the sequestration and air depuration potential of native trees and plants; and
- A shared methodology to calculate CO₂ sequestration potential.

AQUA. Adoption of Quality water Use in Agro-industry sector

Project background

Water resources and water quality are under increasing threat as a result of human activities.

The agro-industry sector and agriculture take the lion's share of responsibility for this situation. In certain countries such as Spain, Italy, Portugal and Greece, the two sectors account for more than 70% of total water abstraction.

These sectors are characterised by a high degree of inefficiency, as well as to a lack of communication and co-ordination. In fact, the quality of water needed for each sector operations would often allow an exchange and reuse of water between sectors, giving space to much more sustainable water management.

In Italy, one of the more important concentrations of agro-industry and livestock businesses is found in the Emilia-Romagna region. Historically, this has supported the economic development and aided the wealth of the region. However, at the same time it has contributed to the depletion of its water resources and to significant problems of land subsidence.

Project objectives

The project aims to demonstrate that the negative impact of agro-industry on water quality and availability can be significantly reduced through the introduction of a 'cradle-to-cradle' (or regenerative) approach to industrial water management in Emilia-Romagna and to adopt private-public partnerships as the means to achieve this.

Specific project objectives are to:

- Contribute to the achievements of the objectives established in the WFD;
- Improve water efficiency and increase water recycling in the agro-industry sector;
- Create a new form of human capital focusing on water management and protection that could favour further forms of collaboration for the preservation or management of public goods;
- Introduce, test and diffuse innovative and cost effective approaches and techniques for reducing water consumption and pollution based on a 'cradle to cradle' approach; and

LIFE09 ENV/IT/000075
AQUA



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Name of contact person

Donatella FERRI

Duration of project:

30 months (01/01/2011 - 30/06/2013)

Total budget in euro:

807,720.00

EC contribution in euro with %:

403,860.00 (50.00 %)

Generic theme:

Water supply – Water quality – Ground water protection

- Increase the awareness of the business sector about environmental threats linked to water scarcity and water quality.

Expected results

The main expected result is the development of a public-private partnership in order to persuade agro-industries to engage in water conservation. The expected benefits for agro-industries are:

- A reduction in freshwater withdrawal and consumption;
- The minimisation of wastewater discharge by reclaiming wastewater;
- The recovery of valuable by-products;
- Improved profit margins as a result of cost reductions; and
- Enhanced corporate image, public acceptance and environmental responsibility.

Managing forests for multiple purposes: carbon, biodiversity and socio-economic wellbeing

Project background

Historically, forests have fulfilled many human needs. As the objectives of forest management have become more complex, management criteria need to take into account new issues, related to the less profitable practice of forestry and to the emergence of environmental forest functions.

Several indicators have been proposed to assess sustainable forest management (SFM). However, detailed information on these indicators is generally lacking and their collection is currently connected to reporting to international bodies such as the Food and Agriculture Organisation (FAO). Furthermore, some of the indicators are of a basic character while processes in forest ecosystems are generally complex. Hence there is the need to collect data on SFM indicators and to relate them to specific forest management practices. Moreover, a link between landscape-scale ecological connections and indicators of SFM is needed, as well as between "medium-to-large" scale forest management, the surrounding landscape and intensive forest monitoring.

Project objectives

The project aims to test and verify in the field the effectiveness of different forest management options in meeting multiple objectives (including production, protection and biodiversity). It will address these issues in different test areas, from production to protected forests, including Natura 2000 sites and priority habitats and species.

Traditional management practices will be compared with new ones developed by the project. Data and policy relevant information on the impact of different forest management options on carbon cycling and the biodiversity of selected forest ecosystems will be collected, analysed and disseminated.

Other important project objectives are:

- Evaluating carbon sequestration, structural features and the biodiversity of managed forests at the forest patch scale and landscape scale, taking into account ecological connectivity, ecosystem fragmentation and interactions with the man-made component;

LIFE09 ENV/IT/000078

ManFor C.BD.



Beneficiary:

Type of beneficiary

Research institution

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Giorgio MATTEUCCI

Duration of project:

60 months (01/10/2010 - 30/09/2015)

Total budget in euro:

5,029,902.00

EC contribution in euro with %:

2,483,270.00 (49.37 %)

Generic theme:

Forest management – Soil and landscape protection –
Desertification prevention

- Assessing the impact of forest management options on selected vertebrate and invertebrate taxa and the possible limiting factors.

Expected results

- Datasets for the calculation of pan-European indicators related to carbon cycle/sequestration and biodiversity (Criteria 1 and 4 of SFM in Europe as set out by the Ministerial Conference of the Protection of Forests in Europe) will be obtained;
- Additional quantitative indicators consistent with the international conventions and European action plans will be set up;
- The project will define a set of "good practices" enforceable among the available forest management options; and
- Individual and organisational awareness about multifunctional forest management will be increased.

Population Exposure to PAH

Project background

Among persistent organic pollutants (POPs), polycyclic aromatic hydrocarbons (PAHs) are a class of complex organic chemicals of increasing concern. They are ubiquitous in ambient air and some have been identified as suspected carcinogens. PAHs and their derivatives are produced by the incomplete combustion of organic material. In highly urbanised areas domestic heating and motor vehicles are the largest contributors of PAHs. As a consequence populations living in these areas are exposed to pollutants that have potential negative health effects (e.g. lung, skin, and bladder cancer, DNA damage and increased risks of cardiopulmonary mortality).

The EU Directive 2004/107/EC sets annual average target values for particulate matter. Furthermore, this directive requires each Member State to monitor various relevant PAHs.

Italy has placed PAHs on the 2009 national annual priority list, with the aim of developing a database able to support related policy actions.

Project objectives

The project aims to address the environmental and health problems caused by the emission, dispersion and transformation of PAH compounds. Its overall goal is to identify and to quantify exposure among children and elderly people to PAH content in particulate matter in the city of Rome and to assess the impact on human health, in order to support environmental policy and regulation in this field.

An integrated approach, based on measurements and modelling techniques, will be used.

The project will build a prototype assessment method to provide basic knowledge on concentrations of PAHs in the city and their health impact. Analyses will be carried out to evaluate the effectiveness of possible reduction measures.

The work will contribute to the development, assessment, monitoring and evaluation of environmental policies at local and national levels. The obtained results will also provide a valuable support to EU legislation concerning PAHs.

LIFE09 ENV/IT/000082
EXPAH



Beneficiary:

Type of beneficiary

Research institution

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Name of contact person

Francesco FORASTIERE

Duration of project:

39 months (01/10/2010 - 31/12/2013)

Total budget in euro:

2,037,749.00

EC contribution in euro with %:

978,202.00 (49.98 %)

Generic theme:

Air quality management and noise abatement

Expected results

The project is expected to produce the following results:

- A full emission inventory of air pollutants with PAHs for Rome;
- Datasets of indoor-outdoor PM_{2.5} and speciated PAHs as well as elemental and organic carbon particulate matter levels in dwellings during summer and winter;
- A dataset of personal exposure to PM_{2.5} and PAHs;
- An infiltration and exposure model with software prototypes;
- Annual and seasonal exposure maps to PM_{2.5} and speciated PAHs for children and elderly people; and
- A database for health assessment with prototype software.

Policy and Protection of Sporadic tree species in Tuscany forest

Project background

In Mediterranean and Apennine woodlands a simplification of forestry structure/patterns can be easily and progressively recognised. This trend negatively affects mainly deciduous species, and it is caused by a wide series of factors, including the ageing of traditional coppice woodlands and limited knowledge of innovative management patterns.

In recent decades, a new woodland management method known as 'single tree silviculture' has become increasingly prevalent in a number of European countries. This method aims to increase the average value of forestry areas while reducing management costs through the selection of a limited amount of high value tree species (target trees).

Project objectives

The project aims to introduce the 'single tree silviculture' technique to Tuscany for the management and conservation of sporadic tree species found within plantations. The overall aim is to increase the biodiversity, ecological stability and whole value (including economic) of the forest.

A regional forest inventory will be compiled, to define suitable areas for the protection and improvement of sporadic tree species. Forest management plans will be drawn up and implemented for the Colline Metallifere and Appennino Pistoiese forest districts. Additionally, demonstration areas will be set up to illustrate the tree-oriented silviculture techniques applied to the sporadic trees.

Expected results

- The project will produce a report on the timber market for sporadic species and a report on the assessment of regional rules on forest protection;
- 800 ha of forest will be managed according to the new planning methodology;
- Demonstration areas (80 ha) will be established to improve sporadic species in (i) the Colline Metallifere forest district (low mountainous phyto-climatic zone) and (ii) the Appennino Pistoiese forest district (mountain phyto-climatic zone); and
- The project will produce a report on monitoring of silvicultural interventions and bird populations, and a report on indicators to assess forestry interventions.

LIFE09 ENV/IT/000087

P.Pro.SPO.T.



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Adriano MAGNI

Duration of project:

28 months (01/09/2010 - 31/12/2012)

Total budget in euro:

974,829.00

EC contribution in euro with %:

487,414.00 (50.00 %)

Generic theme:

Forest management – Soil and landscape protection – Desertification prevention

An integrated assessment methodology to plan local cost-effective air quality policies harmonised with national and European actions

Project background

Air pollution is an environmental issue of major concern in Europe, as highlighted by the EU Thematic Strategy for air quality (COM 2005 446) and Directive 2008/50/EC on ambient air quality and cleaner air for Europe.

Despite the legislation, some regions in Europe produce or maintain pollutant levels that threaten human health and ecosystems. This is the case in the Po Valley, Italy, where the combination of high population densities, high emission densities and poor meteorological dispersion lead to adverse impacts on the population from high levels of fine particulate matter (PM_{2.5}) and on ecosystems because of high levels of ozone and eutrophication.

Although less dramatic, air pollution problems are also encountered in Central Europe. For example, in Alsace, France, where factors – e.g. the high population density in the Upper Rhine valley, high levels of border traffic across France, Germany and Switzerland, as well as the presence of important industrial areas (the Ruhr region in the north-east and the Basel area in the south) – have led to a deterioration of air quality with measurements frequently in excess of the maximum values for particulate matter and ozone compounds.

Project objectives

The main goal of the 'OPERA' project is to develop a methodology and guidelines to support local authority planning for regional policies supporting national and European actions for compliance with air quality standards. The actions are also designed to take into account possible synergies with measures to reduce GHG emissions.

Expected results

- The development of a methodology and assessment software tool (RIAT+) to support local authorities in designing and assessing efficient air quality plans to reduce population exposure to PM₁₀, NO_x and O₃ pollution and ecosystems exposure to NO_x and O₃ for the two project regions (Emilia-Romagna and Alsace);

LIFE09 ENV/IT/000092

OPERA



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Name of contact person

Eriberto DE MUNARI

Duration of project:

37 months (01/09/2010 - 30/09/2013)

Total budget in euro:

2,301,010.00

EC contribution in euro with %:

1,089,544.00 (47.35 %)

Generic theme:

Air quality management and noise abatement

- A register including existing and new emission reduction measures (technical and non-technical) will be applied in the two regions;
- A standard set of quantitative indicators to monitor the effectiveness of action plans; and
- The publication and dissemination of guidelines for local administrations and environmental agencies to integrate local planning for compliance with national and European air quality policies.

Full scale use of liquid injection, for innovative control of waste moisture to enhance biogas production in pre-treated waste landfill

Project background

In the European Union, landfilling of municipal solid wastes remains the principal waste management option. Landfill criteria and procedures are regulated by annex II of the EU Landfill Directive (1999/31/EC) and by article 16 of the Council Decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills.

In 2007, the European Commission (DG Environment) started a project to exchange information and discuss the EU legislation on waste landfilling, in order to prepare more effective co-operation and control of how it takes place.

The final report highlighted a gap in the implementation of the legislative documents. Within this framework, it is clear that more precise definitions are required concerning management requirements, particularly for landfill subcategories, such as pre-treated organic wastes.

Project objectives

The project aims to demonstrate the environmental (particularly in terms of biogas production) and economic performance of a landfill for lesser reactive, biologically treated waste (pre-treated organic wastes) compared with a conventional landfill.

It aims to control the moisture of the pre-treated organic waste, using innovative and monitored liquid injection, in order to shorten and temporarily concentrate the biogas production.

The project's results will be useful to decision-makers for the definition of one of the non-hazardous landfill subcategories foreseen by the Landfill Directive.

Expected results

The main expected result is an increase of biogas production of 20% in the cell at the landfill where the demonstration will be carried out, compared with a conventionally managed landfill.

Other outputs include:

- Creation of a methodology for setting up and implementing the system;

LIFE09 ENV/IT/000101

Bio.Lea.R.



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Name of contact person

Matteo FISCHETTI

Duration of project:

46 months (01/09/2010 - 30/06/2014)

Total budget in euro:

2,425,990.00

EC contribution in euro with %:

1,116,251.00 (46.01 %)

Generic theme:

General – Waste management

- Creation of a database containing all the monitoring data; and
- Five technical publications aimed at landfill managers.

Noise Abatement Demonstrative and Innovative Actions and information to the public

Project background

It is estimated that some 20% of the EU population suffers from elevated noise levels. Noise disturbance in most urban areas exceed limits and guide values by a wide margin. Studies carried out in the Netherlands for example, show that subjective nuisance from noise is increasing in urban areas, and that the number of people reported to be "highly disturbed" by noise while they try to sleep is also rising.

Despite this, the problem is not currently being adequately addressed by public authorities. Furthermore, noise emission is strongly related to CO₂ emissions - solutions can be integrated to mitigate both problems.

Project objectives

The project's main aim is to demonstrate the technical and economical feasibility and effectiveness of best practices for reducing road traffic noise levels (and in some cases, also reducing CO₂ emissions and energy use). This would be achieved by the integration of noise mapping and planning activities, the use of innovative techniques (such as noise barriers, windows, and the resurfacing of roads), traffic management and education.

The project will also aim to demonstrate the effectiveness of the involvement of stakeholders, combined with a clear communication plan, to increase public awareness of traffic noise and its negative impacts.

An integrated model based on NMPB (GPS-based speed collection method for road traffic noise mapping) will be created. This will take into account the population distribution, meteorological data and natural features to enable effective noise monitoring and assessment.

Expected results

- The implementation of a "survey report", collecting data on noise level, traffic flows, population distribution and meteorological conditions for the project areas;
- The development of the NMPB model and related user manual, along with the completion of the noise maps for the project areas; and
- The implementation of four action plans – one for each local body - involving a minimum of 20 stakeholders each.

LIFE09 ENV/IT/000102
NADIA



Beneficiary:

Type of beneficiary

Local authority

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Cecilia BRESCIANINI

Duration of project:

39 months (01/10/2010 - 31/12/2013)

Total budget in euro:

2,144,910.00

EC contribution in euro with %:

695,730.00 (32.44 %)

Generic theme:

Air quality management and noise abatement

Environmental Technologies Adopted by small Businesses operating in Entrepreneurial Territorial Areas

Project background

Small and medium-sized enterprises (SMEs) make up a large part of Europe's economy. All but 1% of Europe's companies are SMEs, and SMEs generate 57% of economic activity in the EU. SMEs thus have a primary role to play in shifting the European economy to more sustainable production and consumption patterns.

SMEs invest in innovation but their objectives often do not consider the environment or sustainability. The environmental impact of SMEs is hard to quantify, because SME activities are fragmented and useful data often do not exist. Initiatives are needed to improve the capacity of SMEs to develop and use environmental technologies. These initiatives are likely to be more successful if carried out on the basis of co-operation across particular territories, or 'ecologically equipped productive areas' (EEPAs), rather than if targeted at individual SMEs.

Project objectives

The project will strengthen and promote the creation and development of EEPAs within the EU's economic system and regulatory framework, thus fostering sustainability. The project's main aims are to:

- Break down the information, technology and economic barriers that prevent SMEs from using environmental technologies as tools for environmental innovation;
- Develop instruments and environmental performance requirements that will promote the idea of EEPAs in Europe;
- Demonstrate good practice in EEPA management;
- Boost private and public demand for centralised environmental services in the EEPAs;
- Contribute to the development of a European Environmental Technology Verification system, through the creation of guidelines for measuring the performance and environmental benefits resulting from technologies used in EEPAs.

Expected results

- The creation of comprehensive guidelines for an environmental technology evaluation scheme;
- An EEPA management model covering: i) working tools for EEPA managing authorities; ii) financial tools for supporting SME investment in green technology in EEPAs; iii) better good practice communication tools;

LIFE09 ENV/IT/000105

ETA-BETA



Beneficiary:

Type of beneficiary

Development agency

Name of beneficiary

Agenzia per la Promozione e lo Sviluppo Sostenibile dell'Area Metropolitana di Milano S.p.A.

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Name of contact person

Dario DOMANTE

Duration of project:

32 months (01/09/2010 - 30/04/2013)

Total budget in euro:

1,950,500.00

EC contribution in euro with %:

975,250.00 (50.00 %)

Generic theme:

Integrated environment management

- The appointment of at least five EEPA managers (one for each area participating in the project); and
- The testing of at least one environmental technology in the EEPAs.

Emissions Free Refrigerated Urban Distribution

Project background

Most green public procurements do not include the transport sector, even though urban transport planning greatly impacts the environmental balance of 'green' urban planning initiatives. One example of this is distribution of perishable goods using refrigerated systems. The goods themselves may be selected on the basis of their environmental benefits (for example organic food), but their distribution has negative environmental impacts. Consumption of perishable, refrigerated food is increasing, but refrigerated urban distribution results in both pollution from trucks and vans, and pollution from use of refrigeration equipment. In addition, standard refrigeration systems and diesel vehicles are a source of noise, negatively affecting the quality of urban life.

In urban area these risk factors are multiplied because of the distance goods are transported, the complexity of distribution chains and urban sprawl.

Project objectives

The main goal of the LIFE project is to reduce environmental damage from the transportation of refrigerated, perishable goods within urban areas. The project will reduce emissions and noise, and will improve the energy efficiency of the logistical chain, while maintaining the standard of perishable goods.

The project will demonstrate an innovative transport solution based on a prototype that integrates the use of: passive-cooling refrigerators; electric vehicles; a system for recharging the self-cooling refrigerators; on-board diagnostic tools to encourage environmentally-friendly driving behaviour; and quality control of perishable goods.

Expected results

- Reduced environmental impact (noise and pollutant emissions) and greater energy efficiency. The passive-cooling refrigerator that the project will demonstrate needs less than 5 kWh for a full recharge, with yearly power consumption of about 650 kWh. This system should be 20-30% more energy efficient than the traditional refrigerator powered by the delivery vehicle's engine;

LIFE09 ENV/IT/000107
EFRUD



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

Consorzio per la Ricerca e lo Sviluppo di Tecnologie per il Trasporto Innovativo

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Name of contact person

Sebastiano VINELLA

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

1,454,261.00

EC contribution in euro with %:

722,831.00 (49.70 %)

Generic theme:

Urban design – Quality of life – Transport planning

- Design of an advanced modular approach applicable to a range of possible situations; this approach will be scalable and supported by documentation and guides for different activities, and by a database that will be accessible online; and
- An evaluation of the environmental and economic benefits from integrated logistical chains.

Insulating high strength-controlled porosity geopolymer floor tiles for the mitigation of global warming

Project background

The manufacture of flooring materials such as ceramic tiles and concrete bricks produces greenhouse gases (GHG), and involves high levels of energy consumption. For ceramic tiles, the energy required is generally 1 710-2 805 kilojoules per kilogramme (kJ/kg) of final product, 90% of which comes from the combustion of natural gas. Over the life cycle of such products, consumption levels can rise to 20 000 kJ/kg, especially for products fired at high temperature. These production processes are responsible for generating 1.7 kg CO₂/kg of finished product.

Cement brick production has similar impacts in terms of energy use and CO₂ emissions. Production of 1kg of cement releases 1.3kg of CO₂, and uses 8 000 kJ of energy. These impacts can be reduced by manufacturing a new fireproof, durable and chemical-resistant flooring material, which does not require high-temperature processing.

Project objectives

The project's main objective is to drastically reduce CO₂ emissions and energy use in the manufacture of ceramic tiles, by using new geopolymers: Geopolfloor-base and Geopolfloor-foam.

The project will demonstrate the feasibility, at industrial scale, of the use of these materials for the production of floor tiles. The project will build on laboratory-scale demonstrations of the use of geopolymers in cement, which have already been done. Such techniques offer the potential for greenhouse gas emission reductions and thus global warming mitigation. The project will apply the laboratory techniques to floor tiles, resulting in a final product that will be resistant to chemicals, stains and abrasive wear, will have good aesthetic properties and can be manufactured without the long curing times typical of cement and concrete.

Expected results

- Reduction of greenhouse gas emissions by 80% compared with gas-fired ceramic tiles or concrete products;
- Reduction of energy consumption, taking into account the whole life cycle of the product, by 60%, mainly as a result of low-temperature processing;

LIFE09 ENV/IT/000108

EnerGeo



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Name of contact person

Giuseppe FERRARI

Duration of project:

36 months (01/10/2010 - 30/03/2013)

Total budget in euro:

2,132,938.00

EC contribution in euro with %:

926,869.00 (43.46%)

Generic theme:

Reduction of emission of greenhouse gases

- Recycling of up to 40% of waste by weight, including incinerator ash and metal particles from machining.

In addition to these environmental benefits, the following production process and product improvements are expected:

- Production of tiles with outstanding thermal properties;
- A faster manufacturing cycle (5-10 minutes from the completion of the preparation of raw materials to demoulding); and
- Manufacturing costs halved compared with traditional ceramic tiles.

ELBA - Integrated Eco-friendly Mobility Services for People and Goods in Small Islands

Project background

Private traffic flows and freight distribution processes are major sources of energy consumption, noxious gas emissions and noise levels in urban areas, causing negative impacts on the environmental quality of cities. Improvements to transport and logistical systems can help to counter this. Public transport services in particular can be more flexible, taking into account changing mobility requirements (such as diffused travel patterns, low demand areas/periods, city-peripheral journeys, and commuting).

EU transport ministers have called for more flexible public transport services, which should "promote the development of new types of intermediate services between public transport and specialised services such as Demand Responsive Public Transport services". Demand Responsive Transport (DRT) systems are flexible services that complement conventional scheduled passenger transport. DRT is more responsive to the needs of customers, in terms of the routes travelled by buses, stops served and flexible timing of services.

Project objectives

The project will focus on the planning, implementation and demonstration of an advanced eco-sustainable integrated mobility scheme for people and goods on the island of Elba, which lies just off the Italian mainland close to Piombino.

The system will be based on a set of 'intermediate' and 'flexible' transport and logistics schemes, and will make use of eco-friendly vehicles, thus improving energy efficiency and the quality of Elba's environment.

Considering the specific characteristics of the geographic area targeted and its environmental and logistical context - small island, short distances, frequent mainland-islands trips, intermodal freight flows, tourist mobility - the project will propose versatile models that could also be applied to other national and international contexts.

Expected results

The project aims to provide a concrete example of an integrated flexible transport and mobility system by:

- Replacement of Elba's current fleet of diesel buses running to a fixed lines/fixed timetable system,

LIFE09 ENV/IT/000111

ELBA



Beneficiary:

Type of beneficiary

Public enterprise

Name of beneficiary

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Name of contact person

Paola MANCUSO

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

1,857,230.00

EC contribution in euro with %:

916,865.00 (49.37 %)

Generic theme:

Urban design – Quality of life – Transport planning

with a flexible DRT system using low/zero emission vehicles;

- Optimisation of the freight flows between the mainland (Piombino) and Elba, using low/zero emissions vehicles to make deliveries on the island;
- Reduction of environmental pollution levels through use of low/zero emission vehicles and promotion of modal changes;
- Reduction of noise pollution through reduced traffic levels and use of eco-friendly vehicles, in particular during the summer; and
- Assessment of the potential of the DRT system to reduce the number of commercial vehicles aboard ferries and traffic congestion on Elba's roads, by reducing the total number of vehicles in different small urban centres and optimising delivery routes.

Endorsement actions for Governance of local environment

Project background

Almost all countries with mountainous or hilly regions have some kind of implicit or explicit policy for mountain areas. However, there are significant differences between the policies of different countries.

Since local authorities are considered, in the context of sustainable development, the smallest scale at which issues can be dealt with in an integrated and holistic manner, 'mountain communities' could provide an appropriate institutional set up to implement and develop environmental policies.

Project objectives

The LIFE project will work in the southern Apennines to achieve the following specific objectives:

- Promote a localised, participatory approach to policy assessment and implementation, in relation to the reduction of emissions and the increasing of CO₂ absorption capacity. This will be done through experimentation with local governance models, with particular reference to the management of forests and mountains. In particular, measures will target preventing and monitoring emissions, as well as initiatives to reduce emissions or increase the capacity to absorb them;
- Contribute to the Kyoto objectives, by anticipating the adoption of tools developed in recent years for management and verification of emissions, and through communication and the use of economic incentives and market mechanisms to reduce greenhouse gases; and
- Experiment with local actions designed to help implement the Kyoto Protocol, using participatory methods combining global emission reduction targets with local sustainability targets.

Expected results

The project's expected results are:

- Increased capacity to absorb carbon dioxide in the areas covered by the project, and subsequent reduction of CO₂ emissions by more than 20%;
- Identification of achievable energy efficiency goals, and of areas in which energy efficiency can be improved;
- An increase in the proportion of green purchases; and
- Greater capacity and improved skills for the recipients of training.

LIFE09 ENV/IT/000115
SUN EAGLE



Beneficiary:

Type of beneficiary

University

Name of beneficiary

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Name of contact person

Alfonso MARINO

Duration of project:

40 months (01/09/2010 - 31/12/2013)

Total budget in euro:

3,006,355.00

EC contribution in euro with %:

1,456,847.00 (48.46 %)

Generic theme:

Urban design – Quality of life – Transport planning

Industrial pilot project for lean integrated process cycle for eco-sustainable production of high performing magnesium components

Project background

Magnesium-based products have enormous potential because of their reduced weight. However, current processes for transforming magnesium and related alloys into components for industrial use have significant cost and environmental drawbacks. Current production techniques require high temperatures (up to 600° C) and are thus energy intensive, and require the use of highly polluting greenhouse gases to protect the liquid metal. The current approach requires a range of different steps that generally take place across different locations. As a consequence, semi-finished raw materials often need to be transported from one processing plant to another, resulting in negative impacts across the whole life cycle in terms of energy and pollution.

Project objectives

The project seeks to demonstrate that it is possible to manufacture magnesium-based larger scale, complex-shape structural elements that can be used in place of classic automotive parts. Use of such components will result in a substantial weight reduction by directly substituting heavier steel or cast iron components, which make up on average some 64% of the weight of a car.

The project will therefore demonstrate at industrial scale an innovative single-step manufacturing process with a substantially reduced carbon dioxide footprint compared with current methods. The result will be automotive parts made from high performing, lightweight materials. The project will also demonstrate reductions in energy use during the production process, leading to reduced greenhouse gas emissions over component life cycles.

Expected results

- The weight of structural automotive components will be reduced by 50-70% through the substitution of steel or cast iron parts with lighter magnesium components (magnesium has a density of 1.81 g/cm³ in its pure form, compared with 7.87 g/cm³ for steel);
- Demonstration of a highly-efficient manufacturing technology that will reduce greenhouse gas emissions by more than 20% compared with conventional processes for the manufacturing of magnesium-based components;

LIFE09 ENV/IT/000117
GREEN INNOVATION



Beneficiary:

Type of beneficiary

University

Name of beneficiary

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Fabrizio D'ERRICO

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

2,059,867.00

EC contribution in euro with %:

1,009,358.00 (49.00 %)

Generic theme:

Reduction of emission of greenhouse gases

- Reduction in the amount of energy used for component production of up to 60%; and
- Introduction of innovative magnesium-based alloys for the production of super lightweight components, with the processes involved validated through mechanical tests and environmental analysis.

Environmental TRY for Innovative Dynamic Environmental and energetic Analyses

Project background

Many environmental and energy studies need meteorological data in order to run models for analysis and forecasting. For example, meteorological data are required for models that predict the dispersion of pollutants in the atmosphere. Analysis of the dispersion of pollutants in the atmosphere over a long period is generally carried out using statistical tables, derived from a multi-year data set. However, the results of recent studies have not been reliable.

In Italy, the national meteorological data-set was created in the 1970s and needs to be updated. However, one of the main problems is the lack of an approved standard of data collection, which often reduces data significance.

Project objectives

The ET IDEA project aims to develop and test the typical reference years (TRYs) concept as an innovative tool for the reconstruction, standardisation and analysis of meteorological data for the whole of Italy.

The project's main expected output is a software package containing TRYs for 1500-2000 locations across Italy. The software will facilitate meteorological-data standardisation and analysis for the whole territory applicable to the following environmental and energy applications:

- Environmental monitoring TRY, for evaluating pollutant dispersion in the atmosphere;
- Wind TRY, to analyse the dynamic performance of wind-power plants;
- Photovoltaic TRY, to register the dynamic performance of photovoltaic plants; and
- TRY to predict the dynamic performance of solar-thermal plants and calculate the winter and summer energy load of buildings.

The project also aims to develop a method for the generation of a TRY for small hydro applications. Other objectives include the development of new methods for identifying and completing missing meteorological data, calculating solar radiation from other variables and the development of a method for expanding the meteorological data across wider geographical areas.

LIFE09 ENV/IT/000124
ET IDEA



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Gianluca VITALI

Duration of project:

28 months (01/09/2010 - 31/12/2012)

Total budget in euro:

1,240,763.00

EC contribution in euro with %:

619,056.00 (49.89 %)

Generic theme:

Other area – Land use development and planning

Expected results

- Software containing standardised meteorological data and Test Reference Years to enable environmental and energy analysis across the whole Italian territory; and
- The possibility to extend the TRYs to other European countries.

Eco-Design for the Nautical Sector

LIFE09 ENV/IT/000125
E.N.A.



Project background

The Marche region shipbuilding industry, which consists of mainly local SMEs, has steadily increased in size. Some 686 enterprises involved in the nautical industry were inventoried in 2005. There are 12 SMEs involved in engine production (10 of which are artisanal) and 158 SMEs involved in fittings production (96 of which are artisanal). The economic crisis, however, has slowed down the business of naval selling, strongly affecting the SMEs and artisanal activity in the Marche region.

Boats are made up of composites and end-products that have a strong negative environmental impact. Furthermore, several working phases overlap, enhancing the pollutant load in the seawater and air. Insufficient internal space prevents the boat from being equipped with utilities for environmental protection.

The economic downturn since 2008, coupled with the need to revitalise the nautical sector, has prompted renewed interest among SMEs and artisans in the Marche region for investment in technological innovation, ecologically friendly productive activities and eco-efficiency.

Project objectives

The main objective of the LIFE E.N.A. project is to improve the environmental performance of SMEs in the naval sector of the Marche region. More than 300 companies will be informed about Directive 2005/32/EC on eco-design requirements for energy-using products, practices in carbon footprint and environmental management systems in the nautical industry. Thus, the project aims to reduce polluting elements and facilitate the application of Best Available Techniques (BAT) for the minimisation – by quantity and toxic risk – of final controlled waste products and the maximisation of energy savings.

Furthermore, a prototype 'eco-boat' will be produced using BAT that is respectful of the environment and easily accessible by disabled people.

Expected results

- Raised awareness on eco-design and environmental compliance through the organisation of workshops and training for at least 300 companies in the naval sector;

Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

Provincia di Pesaro e Urbino

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Name of contact person

Manuela PETROCELLI

Duration of project:

48 months (01/09/2010 - 30/08/2014)

Total budget in euro:

3,000,199.00

EC contribution in euro with %:

1,500,099.00 (50.00 %)

Generic theme:

Eco-friendly products – Eco-design – Green financial products

- Adoption of a collaboration protocol to integrate and increase environmental compliance among SMEs. The protocol will mainly focus on the problem of chemical pollution in naval shipyards, recycling production waste materials, and equal access to shipyards for older workers and the disabled; and
- Preparation of a protocol for eco-design in the naval sector. This protocol will be drawn up on the basis of the experiments carried out to develop BATs for the production of eco-boats.

Pump And Leakage Management

Project background

Water is probably the world's most precious and scarce natural resource. However, water networks in Italy typically lose around half of their supply through leakages. Furthermore, the processing and treatment of water is one of the largest environmental polluters.

The most sustainable approach to improving water management is to make more efficient use of water resources, principally by reducing leakages. This will increase the effective supply to households and businesses and prevent the exploitation of new water resources.

Reducing leaks also reduces pumping costs - and the associated environmental impacts - for the same amount of water. An efficiently operated network means providing an adequate quality of service to customers at the lowest operational cost. This requires the right balance between the costs and benefits of actions to lower leakage levels.

Project objectives

The objective of the PALM project is to develop a Decision Support System to allow water companies to identify the optimum balance between reducing water leaks and being economically sustainable. Ultimately, the aim is to enable water companies to reduce water loss by around 50% and the related environmental impacts by up to 60%.

The Decision Support System will integrate existing state-of-the-art technology to form what should be the most advanced water-efficiency system in the world. It will use the latest acoustic instruments to locate leaks for repair. Leakage control measures will also involve applying a calibrated hydraulic model to the optimum configuration of the water system. It will identify valves to be closed and define the optimum size of the flow meters and pressure-reducing valves.

Pumping costs and the potential benefit of optimising the use of the pumps, exploiting low tariff periods and making better use of the available storage capacity will be examined, combined with an assessment of the costs of leakage detection and repair. This information will allow the typical cost-recovery curve to be defined.

LIFE09 ENV/IT/000136

PALM



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Name of contact person

Alessandro BETTIN

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

1,589,690.00

EC contribution in euro with %:

784,595.00 (49.36 %)

Generic theme:

Water supply – Water quality – Ground water protection

The project will thus provide water companies with the information they need to implement leakage repairs in the most efficient and effective way, and without compromising their economic sustainability.

Expected results

- A decision support system for efficient water leak management;
- A 50% reduction in water loss through leakages;
- A 60% reduction in the environmental impacts associated with water leakage and pumping; and
- A better service to water consumers.

Tourism Accessibility in Small Attractive Cities

Project background

Air pollution and noise are two of the main issues to be tackled in seasonal tourist resorts. This is a particular problem in small/medium sized resorts, where the environmental impact tends to be relatively high. Consequently, implementing an integrated model for improving urban mobility, based on reducing the average distance travelled to find a parking space, will help to improve the quality of life for inhabitants and to improve accessibility for tourists.

Project objectives

The project objectives include:

- Reducing the environmental impact (acoustic and air pollution) of car traffic from the flow of tourists into urban centres;
- Increasing the availability, 'liveability' and accessibility of the urban centre for tourists and for the resident population;
- Defining an urban mobility governance model (T.A.SM.A.C. model) linked to tourist flows;
- Rationalising access and parking through a user information system that will provide information on space availability and admittance;
- Developing several sustainable mobility initiatives led by the communities involved;
- Creating transport services in order to offer an alternative to private car use; and
- Creating a mobility management office, to co-ordinate private accessibility to city centres using alternative transport options.

Expected results:

- A reduction in the environmental impact of car traffic caused by the flow of tourists into small/medium urban centres. This will include a 3db reduction in ambient traffic noise and a NO_x reduction equal to 0.6 kg/day per medium powered vehicle;
- An improvement in the liveability and accessibility of such small/medium centres, for both tourists and residents. This will include a target of managing at least 70% of all parking spaces by an online information/reservation system;
- The definition of indicators for monitoring noise pollution and air quality that will be used by the local authorities in the pilot areas; and
- The development of an urban mobility governance model (T.A.SM.A.C.) linked to tourist flows.

LIFE09 ENV/IT/000146

T.A.SM.A.C.



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Sergio STRALI

Duration of project:

38 months (01/11/2010 - 31/12/2013)

Total budget in euro:

1,454,872.00

EC contribution in euro with %:

666,186.00 (45.79 %)

Generic theme:

Urban design – Quality of life – Transport planning

Recovery of dredged SEDiments of the PORT of Ravenna and SILicon extraction

Project background

Sediment management is becoming a critical issue, particularly where conflicts between port development, conservation of coastal environments and tourism have to be taken into account.

The maintenance of various depths in the harbours channels and basins require the removal of deposited materials. Such actions require disposal areas for dredged materials.

An assessment undertaken within the SedNet European network found that the total amount of sediment dredged in Europe is between 100 and 200 million m³/yr. This material, together with the dredged water, is usually transferred into large fill-in basins, and polluted water is drained into wastewater systems. Polluted sediments are usually sent to landfill sites, incurring all the environmental risks associated with the management of dangerous waste.

Project objectives

The SEDI.PORT.SIL. project aims to demonstrate an integrated approach for the sustainable management of sediment dredged from ports. The project intends to demonstrate the efficiency of consolidated treatment technologies coupled with innovative techniques for recycling and exploiting port dredged sediment as a resource rather than just a dangerous waste.

From a technical perspective, the project proposes an integrated cycle of actions to be applied to sediment (and associated water) right after dredging, in order to reduce the environmental impact and maximise the percentage of material suitable for recycling.

Decontaminated sediment could be suitable as raw material in the infrastructure and environmental engineering sectors. The use of polluted sediments for the extraction of metallurgic silicon will also be investigated.

A pilot study will be undertaken for some sediment samples dredged from the port of Ravenna, Italy. Then the applicability of the process at regional level will be assessed and its viability in a different European context (e.g. the port of Midia, Romania) will be evaluated.

LIFE09 ENV/IT/000158
SEDI.PORT.SIL



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Name of contact person

Elisa ULAZZI

Duration of project:

24 months (01/09/2010 - 31/08/2012)

Total budget in euro:

1,924,557.00

EC contribution in euro with %:

931,193.00 (48.38 %)

Generic theme:

General – Waste management

The final goal is to develop guidelines for treated sediment and raw material reuse, and to assess the feasibility and sustainability of a treatment plant at the port of Ravenna.

Expected results:

- Documentation providing detailed information on sediment in the port of Ravenna; the local and European legal framework for dredged sediments; and technical state-of-the-art decontamination and silicon extraction processes;
- Design and assembly of a prototype plant for the decontamination of sediment and associated water;
- Documentation recording the productivity of the decontamination process; and
- An analysis of the most sustainable options for reusing decontaminated materials.

New decisive and clean technology for the long storage of the metallic wires

Project background

Metal galvanising systems produce emissions and hazardous waste. Emissions into the atmosphere can be as high as 1 000 m³/tonne of fumes from a galvanising bath, which contains ammonia, hydrochloric acid, zinc dusts and zinc alloying elements. Other emissions and waste sources also occur throughout the galvanising process.

Project objectives

The main objective of the project is to minimise all environmental problems related to hot galvanising processes of steel wire rods. This will be achieved by demonstrating the suitability of replacing a hot galvanising process with a new technology based on cold spray galvanising of dusts. The new process will be carried out at room temperature and so reduce energy costs associated with conventional liquid metal pickling. It will also improve access for checking product quality standards during the galvanising process, and make it easier to collect waste materials for recycling.

Optimisation of the new cold spray galvanising process will require improvements to the quality of the wire surface, and hence the project will also introduce a new ceramic micro-peening process.

Expected results

- Cold spray galvanising reduces or eliminates the main environmental impacts of hot-dip galvanising. In particular: (i) energy consumption is reduced to some 130 000 kcal/tonne; (ii) water consumption is reduced to zero; (iii) use of hazardous substances is eliminated; (iv) production of waste is eliminated; (v) emissions of fumes into the atmosphere are eliminated;
- Zinc consumption will be reduced by an estimated 35%, which will lower overall costs since Zinc is the main cost in the galvanising process;
- Energy consumption will be lowered by 50% as a result of the ceramic micro-peening process; and
- The use of ceramic shots for the preparation of the wire rod and the wire will lead to (i) increased efficiency of the oxide removal system and less roughness - from >5µm to <3µm. This should reduce the thickness of the layer of zinc deposited by approximately 30%; (ii) up to 10 times quicker treatment time; and (iii) less deformation in the cold process as a consequence of the reduced energy consumption.

LIFE09 ENV/IT/000174
Ultra Crash Treatment



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Name of contact person

Giovanni CAVATORTA

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

2,841,963.00

EC contribution in euro with %:

1,230,981.00 (43.31 %)

Generic theme:

Clean technologies

New eco-process of superficial treatment of the metal wire products

Project background

Manufacturing of wire rod products can have a high environmental impact because of the use of large quantities of water and acids, energy-intensive operations and emissions associated with the process of producing thick zinc coatings using hot-dip equipment.

Project objectives

The project intends to demonstrate technological approaches that reduce the environmental footprint of wire rod products. Physical treatments will replace chemical processes and raw material recycling opportunities will be improved during the manufacture of high performance metal wire products, such as nails, screws and arc-welded nets.

The core of the project is a new descaling and scale milling mechanical process. This innovative dry micro-layering treatment will descale using mechanical and abrasive actions. It will be applied after the wires are drawn and use microwave plasma surface treatment, which favours the subsequent hot deposition of a high performance Zn-Al-Mg based alloy. Iron-based particles recovered during descaling are to be separated and reused as pigments, or within metal processing plants.

Further environmental impact reductions will be gained during the wire surface preparation and zinc coating stages. A new pre-treatment stage of surface cleaning and activation by microwave plasma will be tested, which should reduce the amount of zinc coating required and also use high performance ternary alloys of the Zn-Al-Mg system. The overall aims of the project are to reduce raw material use, drastically decrease acid and pickling bath use, reduce the production of pollutant zinc ashes, increase the useful life of the manufactured products and make them more suitable for welding without affecting the protective surface coating.

Expected results

The project will set up a demonstration pilot line, able to manufacture up to 4 000 tonnes/yr of iron-based wire-drawn products.

The beneficiary calculates that if the new technique was implemented by all EU steel wire producers (total output: 7 860 000 tonnes/yr – source: IISI, 2004), it would serve to:

LIFE09 ENV/IT/000185
MDPATC



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Name of contact person

Giovanni CAVATORTA

Duration of project:

36 months (01/11/2010 - 31/10/2013)

Total budget in euro:

2,483,965.00

EC contribution in euro with %:

1,123,233.00 (45.22 %)

Generic theme:

Clean technologies

- Valorise 2 000 tonnes of metallic waste, which will be recycled during mechanical descaling, and converted into shot-peening particles and iron oxide pigments;
- Reduce electric power consumption in descaling and hot dip coating by 480 000 kWh/yr (120 kWh/tonne);
- Achieve water savings of 25 000 m³/yr; reduce acid sludge production by 2 500 tonnes/yr and production of hydrochloric and sulphuric acid by 6 000 tonnes/yr;
- Reduce noxious vapour emissions from hot dip coating baths, depending on the composition of the bath; and
- Reduce the amount of waste zinc ash produced during the coating process.

Ennobling of sludge for energy use and industrial

Project background

Waste products from workers on offshore rigs need to be treated in compliance with environmental regulations. Conventional waste treatment and disposal systems use heat to produce pellets or bricks with 5-35% water content. These can be recycled for use in boilers, industrial heaters, cement kilns and similar. Smaller-scale waste processing facilities, such as those used off-shore, face issues regarding odour emissions, safety risks associated with combustible matter or gases, and premature wear of the drier components caused by the need to add sand to crumble the waste during treatment.

Project objectives

The objective of this project is to demonstrate the cost effectiveness of a new waste treatment plant for offshore units. This is based on a hybrid microwave and hot air heating technology capable of converting biological sludge into combustible pellets. Microwaves are expected to help sanitise the end product, which can then be fully valorised as incinerator fuel. The hybrid microwave and hot air system will also contain equipment to allow the crumbling of semi-dried sludge without any external mechanical action. Additional benefits are anticipated from the new know-how gained about the use of microwaves in a confined environment.

Expected results

- Demonstration of a technology with the capacity to convert at least 650 tonnes/yr of biological sludge, equivalent to the production of a town of 60 000 inhabitants;
- Production of 280 tonnes/yr of combustible pellets;
- The use of microwaves will allow rapid and selective removal of water contained in the filter-pressed biological sludge (72-86%);
- Direct microwave interaction with water-containing micro-organisms is expected to sanitise the pellets produced; and
- The sludge drying process is expected to have an efficiency of at least 70%.

LIFE09 ENV/IT/000186

Sludge's Wealth



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Name of contact person

Danilo MARANGONI

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

1,584,284.00

EC contribution in euro with %:

777,730.00 (49.09 %)

Generic theme:

Waste water treatment

Environmental COoperation model for Cluster

Project background

Italy's Apennino Tosco-Emiliano National Park is situated between the regions of Tuscany and Emilia-Romagna. Containing an extraordinary reservoir of natural and cultural values, the Apennines are surrounded by large industrial and urban conurbations. The park authority aims to protect the Apennines from risks by helping to harmonise demands from ecological, social and economic stakeholders.

SMEs play a key role in this sustainable development process but some SMEs face particular difficulties and can traditionally find it harder to comply with environmental legislation than their larger counterparts. In general, the smaller the company, the more difficult it is. Although there is a cost implication in compliance, companies that do take action can benefit from lower energy bills and greater efficiency in their operations.

Project objectives

The main objective of the ECO-CLUSTER project is to improve the environmental footprint of SMEs operating in the national park area. A parallel purpose aims to help improve the competitiveness of local businesses. Such dual goals will be achieved by preparing and implementing an 'Action Plan for the Environmental Compliance Assistance Programme for SMEs (ECAP Programme (COM/379/2007)'. This green-growth business model is based on a cluster approach, which includes SMEs and public authorities within a public-private environmental management partnership that operates various voluntary instruments tailored to the individual needs of different cluster members. Support will be provided to help cluster members carry out audits certifying compliance with environmental legislation and regulations.

Special attention will be provided for the tourism sector via support to improve energy efficiency and reduce emissions among members of the "Cerreto Laghi" tourism cluster.

Expected results

- Implementation of an ECO-CLUSTER environmental management model;
- Preparation of a database containing approximately 100 clusters in Italy and the rest of Europe;

LIFE09 ENV/IT/000188
ECO-CLUSTER



Beneficiary:

Type of beneficiary

Park-Reserve authority

Name of beneficiary

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Name of contact person

Giuseppe VIGNALI

Duration of project:

42 months (01/10/2010 - 31/03/2014)

Total budget in euro:

934,967.00

EC contribution in euro with %:

466,358.00 (48.88 %)

Generic theme:

Integrated environment management

- Reinforcement of local capacity to create integrated environmental policies and to make them more accessible to SMEs;
- Raising of SME awareness at a local level about environmental management legislation, associated issues and opportunities; and
- Reduction of administration and consultancy costs for the adoption of voluntary environmental management tools (EMAS, Ecolabel, GPP, FSC) by SMEs.

Local Authorities Improving Kyoto Actions

Project background

For Italy, the Kyoto protocol target for GHG reduction is established at 6.5% below 1990 levels. From 2008 to 2012, the amount of Italian GHG emissions is not to exceed 485.7 million tonnes CO₂eq, which equates to a reduction of 95 million tonnes CO₂eq/yr. National estimates indicate that roughly 30 million tonnes will be reduced by the industrial sector, leaving a deficit of 60 millions tonnes. Strategic schemes and mechanisms are required to facilitate voluntary action by local authorities and other stakeholders from non-emissions trading scheme (ETS) sectors to contribute to this national target.

Project objectives

The project aims to demonstrate that local authorities are able to adopt effective harmonised accounting, planning and reporting methods for projects and plans in the field of GHG emission reductions. Specifically the LIFE assistance will be used to: determine a GHG baseline inventory and define a GHG emission target at municipal level in the project area; define actions and measures for target achievements at local level; help European and Italian institutions to activate a scheme supporting local contributions to GHG emission goals; elaborate and test a scheme for the verification and attribution of credits for voluntary GHG emission reductions and greenhouse gas storage at local and national level; and establish a voluntary market for GHG emission credits to be validated during the activities of the LIFE LAIKA project. The latter will be important in order to provide an economic stimulus for emissions reduction measures.

Expected results:

- Four Climate Commitment Draft (CCD) Plans for each municipality involved in the project;
- Four assessment reports of the CCD Plans;
- Four implementation reports of the CCD Plans;
- A monitoring tool for the implementation of measures contained in the plans and monitoring guidelines;
- A GHG emission credits register;
- A manual for the scheme acknowledging the economic value of GHG reduction actions and creation of monetary incentives; and
- Market simulation of the scheme.

LIFE09 ENV/IT/000200
LAIKA



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Stefano RIAZZOLA

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

1,852,654.00

EC contribution in euro with %:

926,327.00 (50.00 %)

Generic theme:

Other area – Land use development and planning

Achieving good water Quality status in intensive Animal production areas

Project background

Nutrients, such as nitrogen (N) and phosphorous (P), can deteriorate groundwater quality by increasing concentrations of nitrates and ammonia, which can cause eutrophication problems. Agriculture is a significant contributor of nutrient loads in the aquatic environment and can account for between 50-80% of the total N load, depending on context.

An increase in livestock numbers over the past 50 years has generated an increased amount of manure which in turn has contributed to an increased overall nitrogen load on the environment. New technologies and tools for reducing environmental impacts of agriculture, while guaranteeing the highest levels of productivity and income, are now available and these need to be promoted to both farmers and rural advisory services.

Project objectives

This project's main objective is to help reduce water pollution from nutrients at river basin scale by optimising the use of nitrogen and phosphorus from livestock farms, thus reducing nutrient losses to water. This will be achieved by: reducing nitrogen in manure by lowering N inputs in feedstuffs (using feeding techniques based on low-protein diets); improving efficiency of fertilisation, maximising the efficiency of nutrient use (N – P), promoting manure application for crop rotations characterised by a long growing season and high uptakes; reducing nutrient losses caused by agriculture through agro-environmental measures and practices; reducing pressures and impacts within intensive livestock agricultural catchments by separating the solid fraction from manure and transferring this fraction to areas characterised by low fertility or declining soil organic matter; and improving and simplifying monitoring and controls on farming practices by implementing tools for the traceability and certification of good practices in nutrients management at farm level.

Expected results

- Reduction of nitrogen excreted by livestock by 10-20% depending on the type of farm;
- Reduction of urea and uric acid in manure, and, eventually, of the most volatile N form, reducing ammonia emissions (by approximately 15% on animal housing);

LIFE09 ENV/IT/000208
AQUA



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Name of contact person

Marco LIGABUE

Duration of project:

42 months (01/10/2010 - 31/03/2014)

Total budget in euro:

2,634,689.00

EC contribution in euro with %:

1,310,901.00 (49.76 %)

Generic theme:

Diffuse and dispersed sources of pollution

- An increase in the solid-liquid separation efficiency of the slurry, thus optimising the use of N and P contained in both clarified and solid fractions;
- Reduction of overall nitrogen input and consequently of N losses, including N₂O emissions;
- Reduction of N losses to waters up to 50%; and
- Prevention of soil erosion, soil degradation and nutrient losses (N, P) as well as contributing to flood control, via improved soil cover over long periods and buffer strips and wetlands acting as "lamination" areas.

Integrated Strategies for GHG

Mitigation in dairy farms

Project background

Italy's agricultural sector is considered to be responsible for producing 35% of the country's methane and 45% of its nitrous oxide greenhouse gas (GHG) emissions. Much of these emissions are linked to intensive livestock husbandry. The Pianura Padana (Po River plain) contains the highest concentration of livestock in Italy and the need exists there to develop new methods for limiting the emission of methane, ammonia and volatile non-methane organic compounds. Odour pollution is also high in the Pianura Padana and options exist to address all these negative environmental impacts via converting livestock waste into renewable energy.

Project objectives

The project aims to develop an integrated strategic approach for mitigating GHG emissions from dairy farms in the target area. This will be achieved by monitoring 50 dairy farms in the province of Lodi. Monitoring data will be analysed to increase knowledge about:

- GHG of enteric origin, through the evaluation of dietary strategies that may reduce methane emissions and excretion of nitrogen in faeces;
- Processes that drive CO₂, CH₄, and N₂O emissions in dairy production and how to best harness such emissions within biogas production units;
- How different types of livestock shelters can be adapted to maximise manure and waste management efficiency;
- Options for optimising the efficiency of biogas plants;
- Impacts of agro-technique (fertilisation, irrigation, cultivation) on productive, environmental and economic aspects of biomass production from crops; and
- How organic waste from livestock farming can be best used to improving organic content and nutrient levels in soils that are used for producing energy crops.

Information gained during the project will assist researchers, farm planners, and policy-makers to develop and maintain sustainable farming systems.

Expected results

- GHG reduction from livestock manure by the validation of strategic approaches in nutrition management;

LIFE09 ENV/IT/000214

GAS-OFF



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Name of contact person

Luigi STEFANINI

Duration of project:

39 months (01/10/2010 - 31/12/2013)

Total budget in euro:

1,806,494.00

EC contribution in euro with %:

903,247.00 (50.00 %)

Generic theme:

Reduction of emission of greenhouse gases

- Design of robust strategic approaches to mitigate GHG emission relative to biomass crop, manure and digestate management;
- Improved biogas production;
- Demonstration of the effects of agro-techniques (tillage and irrigation) and organic matter inputs (compost, digestate, effluents) on the LCA and economic budget of biomass crop production;
- Validation (in terms of practical efficacy and sustainability) of diets that are proven to be effective in reducing methane emissions; and
- Identification of manure management and slurry collection methods that facilitate maximum methane yields.

H2POWER_Hydrogen in fuel gas

Project background

The 'H2POWER' project targets air pollution resulting from the production and use of fuels in the transport sector. Notably this includes emissions of CO₂ and other climate-related pollutants, which have increased over the last two decades, such as SO₂, NO_x, CO, ozone, benzene, polycyclic aromatic hydrocarbons, small particulates and lead.

Studies indicate that transport is responsible for more than 25% of CO₂ emissions and emissions from transport are rising at the fastest rate (+39% between 1990 and 2010 according to the last EEA forecasts).

The use of hydrogen as a fuel is an environmentally and economically sustainable solution, promising an inexhaustible energy source. The technologies for hydrogen production from water are well-known and readily available. Renewable technologies can generate electricity to produce hydrogen from electrolysis with zero greenhouse gas emissions. This process can be implemented entirely on-site, thus avoiding transport costs typical of other kind of fuels, and allowing complete energy resource planning.

Project objectives

The general aim of the project is to develop a hydrogen/methane-fuelled city bus from a methane-fuelled bus. The project will be demonstrated in the municipality of Perugia and tested on the historic city's urban and peri-urban routes (including the winding and extremely narrow streets typical of its historic centre).

Specific project aims are to:

- Test the feasibility of hydrogen-methane fuel on small public transport vehicles such as the "IVECO DAILY" in Perugia city and surrounding peri-urban areas;
- Develop and test a prototype, public transport vehicle, the IVECO DAILY SO C14, 16 KW 4 cylinders, that will have a hydrogen-methane fuel kit;
- Evaluate and report on improvements in the efficiency and environmental performance of the demonstration system;
- Progressively develop a public transport fleet made up of eco-friendly vehicles and provide supporting documentation in partnership with other local authorities;

LIFE09 ENV/IT/000216

H2POWER



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

Municipality of Perugia

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Name of contact person

Leonardo NALDINI

Duration of project:

38 months (01/09/2010 - 31/10/2013)

Total budget in euro:

1,440,205.00

EC contribution in euro with %:

633,943.00 (44.02 %)

Generic theme:

Air quality management and noise abatement

- Ensure that the project findings are applicable to the European strategies and policies for sustainable urban mobility and to the needs and priorities of transport policy-makers.

Expected results

Expected savings from the prototype hydrogen-methane powered bus are:

- A reduction of 30% in CO₂ pollutant emissions from combustion processes; and
- A reduction in CO₂ emissions coming from oil-based fuels (e.g. petrol) produced in refineries and of the pollution generated by the need to transport that fuel.

Development and validation of ecologically sustainable tyres through life cycle enhancing technologies

Project background

Road transport generates more than 20% of all CO₂ emissions in the EU, with passenger cars responsible for more than half of these emissions. The car industry has made progress in fulfilling its obligations under the voluntary agreement to market cars that emit less CO₂ and, in doing so, has delivered a sizeable contribution to the EU's strategy for reducing greenhouse gas emissions.

Mandatory tyre pressure monitoring fitments on cars are important as tyre pressure can influence tyre rolling resistance (RR) and consequently fuel consumption. Tyre RR loss contributes to around 20% of the car fuel consumption and thus a 10% increase in RR translates to 2% increase in fuel consumption.

As of 2012, performance regulation for tyres will set the minimum standards in RR and noise, which are the key impacting factors according to the tyre lifecycle analysis (LCA).

Project objectives

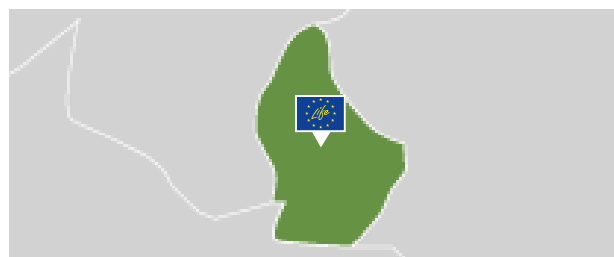
The project will develop environmentally sustainable tyre concepts based on novel green material solutions and weight reducing tyre construction concepts. The ecological and economical benefits will be validated through the latest software versions of carbon footprint and lifecycle impact calculation.

The target is to enhance the environmental tyre performance by improving all life cycle stages of the activities involved during the manufacturing, use and recycling of the tyre. The project goals in relation to tyre manufacturing include:

- To introduce recycle materials (derived from used rubber articles);
- To introduce novel renewable source materials (lignin);
- To introduce new chemicals for tyre vulcanisation and tyre ageing protection with no or reduced aqua-toxicity;

The project goals on improving the tyre performance during use stage are:

LIFE09 ENV/LU/000390
ECO2 Tyre Tech



Beneficiary:

Type of beneficiary

International enterprise

Name of beneficiary

Goodyear S.A.

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Name of contact person

Georges THIELEN

Duration of project:

43 months (01/09/2010 - 31/03/2014)

Total budget in euro:

5,285,323.00

EC contribution in euro with %:

2,267,662.00 (42.90 %)

Generic theme:

Reduction of emission of greenhouse gases

- To reduce RR, thus resulting in less energy consumption;
- To improve tyre wear performance, reducing the amount of worn tyre particulate matter formed per kilometre.

Expected results

- 40% reduction in RR reduction;
- 25% reduction in the weight of the Goodyear premium brand average;
- 25% mileage improvement in the Goodyear premium brand average;
- A noise reduction in the range of 3 dBA (audible decibels) of the Goodyear premium brand average;
- 15% novel recycled and renewable material content in tyres and 30% in the raw material and tyre production; and
- EOL (End of Life) with enhanced recycling outlets (30%).

The positive effects of quiet facades and quiet urban areas on traffic noise annoyance and sleep disturbance

Project background

About 20% of the European population is exposed to environmental noise at levels that experts consider unacceptable. The health impacts include annoyance, sleep disturbance, and stress-related problems such as cardio-vascular disease. Road traffic is the main source of environmental noise pollution; other sources include aircraft, trains and industry.

Indirect comparisons of the harmful effects of environmental noise and air pollution are possible using the concept of disability-adjusted life years (DALY). This suggests that noise pollution is just as serious as air pollution. Moreover, whereas traffic-induced air pollution is expected to decrease over the next decade, the opposite is true of noise pollution.

The Environmental Noise Directive (END) (2002/49/EC) demands that major EU cities produce maps of traffic noise every five years, and draw up action plans for locations where noise levels are unacceptably high. Currently, noise mapping and action planning focus on the most exposed facades of city dwellings. However, the END indicates that quiet areas in cities and quiet facades should also be controlled.

Project objectives

The QSIDE project aims to demonstrate a new methodology for assessing traffic noise in cities, including in quiet areas and at quiet facades. The project aims to show how European cities can effectively reduce the harmful effects of traffic noise by offering people noise refuges.

The project will use a new engineering method to measure noise levels at quiet facades and in quiet areas and to produce detailed traffic-noise mapping of cities. It will then estimate the reduction in the numbers of annoyed and sleep-disturbed people as a result of the creation of quiet facades and areas.

Demonstration calculations will be performed for the cities of Amsterdam and Gothenburg in order to show the benefits of quiet facades and areas. It is expected that this will show that the possibility to choose a bedroom on the quiet side of a house reduces the numbers of annoyed/highly-annoyed and sleep-disturbed people.

LIFE09 ENV/NL/000423
QSIDE



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek TNO

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Name of contact person

Erik SALOMONS

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

571,568.00

EC contribution in euro with %:

285,784.00 (50.00 %)

Generic theme:

Air quality management and noise abatement

The new methodology will offer local authorities a tool for assessing the positive effects of quiet facades and areas. The project will also produce guidelines indicating how quiet facades and areas can be created as part of urban environmental policy, for example, by modifying traffic flows or by choosing specific orientations of residential buildings with respect to roads.

Expected results

- Demonstration of a new noise assessment method for quiet areas;
- Demonstration of the health benefits of creating quiet facades and areas; and
- An important contribution to implementation of the Environmental Noise Directive.

Asbestos denaturing with innovative oven systems

Project background

Asbestos became increasingly popular with manufacturers and builders in the late 19th century because of its resistance to heat and to electrical and chemical damage, as well as its sound absorption and tensile strength. Most of the asbestos used was mixed with cement for the construction industry.

However, asbestos is now known to be extremely hazardous, causing diseases such as lung cancer. Asbestos must be removed and disposed of, but unfortunately, there are currently no safe ways to do this. Landfill remains the favoured solution, but there are real risks of asbestos leakage to the environment, dispersing asbestos fibres to the surrounding environment.

Today, a significant amount of asbestos is still present in buildings, roads and water pipes. This causes a huge waste stream of Asbestos Fibre Cement (AFC) from construction and demolition waste. It is estimated that there is still 3.5 to 4 million tonnes of AFC waste to be removed and disposed of in the coming decades in the Netherlands alone.

Project objectives

The ADIOS project aims to demonstrate that asbestos denaturing by means of thermal treatment is feasible on a large scale and that this denatured asbestos has safe industrial uses. It thus hopes to show that there is a better environmental and economic alternative to incinerating AFC waste or depositing it in landfill.

The project will construct a pilot plant with a tunnel oven to demonstrate a prototype thermal treatment process for denaturing asbestos. The project expects to denature 20 000 tonnes of AFC waste from the construction and demolition industries within the project period.

Through this demonstration, the project aims to show that asbestos denaturing by means of thermal treatment is technically and economically feasible on a large scale. The target is to achieve a recycling rate which would be equivalent to 80 000 tonnes/yr of AFC waste.

ADIOS also intends to show that the denatured asbestos is a new base material that is safe and suit-

LIFE09 ENV/NL/000424
ADIOS



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Name of contact person

Anton REEF

Duration of project:

30 months (01/09/2010 - 28/02/2013)

Total budget in euro:

10,474,800.00

EC contribution in euro with %:

1,461,982.00 (13.96 %)

Generic theme:

Hazardous waste

able for use as a replacement for primary raw materials in construction and other industries, such as those producing cement, chalk and asphalt. A desired final outcome is new national legislation around effective asbestos disposal and denaturing.

Expected results

- Demonstration of a feasible, large-scale, thermal denaturing process for asbestos;
- 20 000 tonnes of AFC-waste denatured;
- Demonstration of the suitability of the new denatured material for use in modern industries; and
- Agreed legislation on asbestos disposal;

Demonstration of the technological, economic and environmental sustainability of a full-scale tidal energy device in an offshore environment

Project background

Ocean energy is one of the largest untapped renewable energy sources. The potential from offshore areas within just 12 miles of the EU coast is estimated to be 19 000 MW (Munk and Wunsch, 1998). This figure grows to 114 000 MW if unexploited and virgin offshore areas further than 12 miles are included.

Wind farms and ocean-energy farms for harvesting tidal energy should, in the future, be coupled to offset costs of expensive electrical grid connections and offshore installations. However, the ocean-energy industry is currently 20 years behind the wind energy sector. Though initially slow, the wind industry experienced an annual growth rate of 48% from 1971 to 2004. By 2006, it had a collective annual turnover of more than €12 billion and employed 60 000 people worldwide.

The 2006 OECD/IEA report estimates a growth rate of 46% from 2004 to 2030 for the ocean-energy industry. Assuming a worldwide extractable tidal potential with present technologies of 62 000 MW, the anticipated saving in carbon emissions is over 72 million tonnes/yr. Furthermore, the predictability of tidal energy gives it important competitive advantages over wind and solar power.

Project objectives

The BLUETEC project aims to demonstrate the technical feasibility and cost effectiveness of a full-scale 1 MW tidal-energy installation. It thus hopes to demonstrate the technology's potential to significantly reduce CO₂ emissions and improve Europe's competitiveness in exporting innovative and renewable technologies.

This demonstration project will establish a tidal installation composed of four innovative Kobold turbines, rated 250 kW each. These will be mounted on a 40m x 20m floating steel platform attached to the sea bed with two lines of catenary mooring.

The project expects to show that Bluetec is the best and most reliable device currently available, even in harsh sea conditions. Specific objectives are to produce 1 600 MWh per year at a cost of €0.34/kWh. Costs are expected to be initially comparable with solar energy and decrease over time with expansion of the technology.

LIFE09 ENV/NL/000426
BLUETEC



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Name of contact person

Chintan SHAH

Duration of project:

30 months (01/09/2010 - 01/03/2013)

Total budget in euro:

7,990,957.00

EC contribution in euro with %:

2,512,695.00 (31.43%)

Generic theme:

Reduction of emission of greenhouse gases

BLUETEC should show a CO₂ reduction of 652g/kWh or 1 045 tonnes/yr of CO₂. Evidence from the project will be used to work with the EU and five European countries where tidal energy is commercially exploitable to simplify the regulatory framework for offshore technologies.

Expected results

- Demonstration of the feasibility and reliability of a 1.0 MW Bluetec tidal-energy installation;
- Generation of 1 600 MWh/yr at €0.34/kWh;
- Prevention of 1 045 tonnes CO₂/yr; and
- Generation of reliable data, which could inform regulatory change

Sewage energy exchange

Project background

Limited reserves of natural gas and oil are causing prices to rise almost continuously and the link between these fuels and climate change is now largely accepted. Nevertheless, they still account for most of the fuel for heating in the EU. Alternatives that are ecologically and economically feasible are vital.

An innovative and potential alternative source of green energy is wastewater in the sewage system. The heat produced by wastewater can be harnessed and transferred to buildings by placing heat exchangers directly inside the sewer.

The city of Arnhem is an Urban Heat Island (UHI); it has a metropolitan area which is currently about 7°C warmer than its surrounding rural areas. This effect is largely caused by waste heat generated by energy usage and the use of materials in urban development which retain heat. Arnhem has the stated ambition to become CO₂ neutral.

Project objectives

The main objective of the project is to demonstrate a new SEWage Energy EXchange system (SEWEEX) to transfer heat from the sewage system to urban buildings. It expects to show important environmental and financial benefits compared with other energy sources.

The SEWEEX technology will be used to exchange energy between wastewater and a minimum of 50 000 m² of residential space (around 500 households), 38,000 m² of offices and shops, and 33,000 m² of public buildings. The technology will harness around 5 000 MWh of green energy per year, which will be used to heat the buildings during winter. During warm summers, the system will channel heat away from the urban area, reducing the UHI effect by 10%.

SEWEEX aims to reduce CO₂ emissions, as well as fine dust or nitrogen oxides (NOx) emissions, by 78% compared with the use of fossil fuels. The remaining emissions will come from the energy required for the heat exchangers themselves. Significantly though, this can be generated outside the city, delivering zero emissions and improved air quality in the urban centre.

LIFE09 ENV/NL/000427
SEWEEX



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

Municipality of Arnhem

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Name of contact person

Ilja JANSEN

Duration of project:

60 months (01/09/2010 - 01/09/2015)

Total budget in euro:

10,023,580.00

EC contribution in euro with %:

1,303,265.00 (13.00 %)

Generic theme:

Municipal waste (including household and commercial)

SEWEEX also expects to demonstrate that the energy potential from sewage wastewater is greater than from solar, wood and biomass combined and that it is not subject to the same variations in strength that can affect wind and solar power.

Expected results

- Demonstration of the SEWEEX system for 120 000 m² of building space;
- Reduction of CO₂, fine dust and NOx emissions by 78% compared with fossil fuels;
- A 10% reduction in the UHI effect; and
- Superior performance to other green energy sources.

Capacity Building in Sustainable Public Procurement

Project background

Each year European public authorities spend the equivalent of 16% of EU gross domestic product on the purchase of goods – such as office equipment, building components and transport vehicles – and services, such as building maintenance, transport services, cleaning and catering services and works. This public procurement can shape production and consumption trends and a significant demand from public authorities can create or enlarge markets for environmentally friendly products and services.

Project objectives

The project aims to mainstream sustainable public procurement (SPP) in Portugal and Greece by:

- Assisting public authorities in implementing a procurement strategy in line with their economic, social and environmental policies;
- Encouraging co-operation among public procurers;
- Promoting greater market engagement among public procurers and suppliers.

The project will focus mainly on public authorities. Private organisations will be addressed through the adaptation of some of the instruments produced within the project, namely the SPP Toolbox. The project will test approaches to develop a procurement strategy that takes into account and contributes to the targets of all relevant policies of the given public authority. The project will enhance awareness, networking, collaboration and training in sustainable procurement for procurers and suppliers.

Expected results:

The project will deliver results both at micro and macro level. At micro level, two types of results are expected:

- The establishment of national sustainable procurement networks in Portugal and Greece, supported by: a communication platform; a good practice catalogue; and studies on the integration of social and environmental criteria and the effect this will have on the market. These networks will foster capacity building in sustainable procurement and will promote market involvement; and
- The application of sustainable procurement at organisation level, resulting in the development of a step by step guide on how to implement sustainable procurement at strategic and operational level, complemented by training material.

LIFE09 ENV/PT/000050
Building-SPP



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Paula TRINIDADE

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

1,079,956.00

EC contribution in euro with %:

538,228.00 (50.00 %)

Generic Theme:

Eco-labelling – Eco-market – Consumer awareness –
Green public procurement

At macro level, the experience and knowledge obtained will be used to develop recommendations to the national green public procurement strategies.

Integrated system for protecting and analysing the status and trends of water threatened by nitrogen pollution

Project background

The Barlad river basin represents 17% of the surface of the Siret river basin - the largest in Romania and a major affluent of the Danube from the Eastern Romanian Carpathians. It is characterised by a high number of nitrate sources from agriculture and villages and has many 'nitrate vulnerable' zones.

Along the 207 km of the Barlad river, at least 116 km is "at ecological risk" from pollution by nutrients coming from agriculture, non-treated domestic sources and industrial wastewater - particularly from the chemicals sector. Downstream of the city of Negresti, the nitrate concentration in the Barlad river is as high as 50 mg/l.

In the 1990s, large areas of forest along the river were cleared, increasing the speed of nitrogen and phosphorus runoff. This trend is expected to increase as a result of climate change.

Project objectives

The CLEANWATER project intends to develop, at the river-basin scale, an integrated water management system to identify waters under threat and designate vulnerable zones. This aims to provide the authorities with a means of developing effective river-basin management policies for the Barlad river and to assess their impact.

The beneficiary will develop the management system based on the Strahler stream model of surface water flow and pollution transportation and the River Modelling System (RMS), which computes the transfer of nutrients in groundwater systems. The system will contain software capable of calculating the environmental impact of activities and changes.

Given the data requirements of these models, the project will develop, test and implement a GIS platform which will collect data on features such as soil characteristics, the climate and village zootechnics (animal management).

The management system will depict the current status of the water and predict future nitrate and phosphorous flows in the aquifers of the Barlad river basin

LIFE09 ENV/RO/000612
CLEANWATER



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Name of contact person

Maria Cristina TRIFU

Duration of project:

41 months (15/10/2010 – 01/03/2014)

Total budget in euro:

698,319.00

EC contribution in euro with %:

300,622.00 (43.05 %)

Generic Theme:

Water management at the scale of the river basin

based on projected changes in land-use, industrial activity and climate. Through a user interface, the relevant authorities will be able to use the scenarios generated by the system to define cost-effective river basin management plans.

Expected results

The project expects to:

- Develop a GIS-based interface to predict the impact of natural changes and policy decisions on nutrient concentrations in the Barlad river basin;
- Facilitate the identification of cost-effective measures for river management;
- Provide support for land-use planning; and
- Contribute to a future national approach to zones vulnerable to nutrient pollution.

Creation and restoration of aquatic ecosystems for improvement of water quality and biodiversity in agricultural basins

Project background

In rural areas, agricultural practices have often led to the contamination of water resources. This has typically come from the high nitrate and phosphate contents of agricultural products and water run offs.

The Monegros area in the Ebro river basin has been suffering from increasing degradation of water quality in most of its rivers, mainly caused by the intensification of agriculture. This has caused decreases in biodiversity and the quality of the natural ecosystem.

One way of tackling this problem is to reduce the quantity of nitrates applied to the field. Another option is to remove these nutrients using natural systems, such as wetland management.

Various studies and projects have proved that the creation of wetlands on agricultural land can lead to effective reduction in nutrient content. However, there is still a need to demonstrate their effectiveness at river-basin level at controlling the exportation of nutrients. There is also a need to successfully couple wetland creation with complementary measures such as river bank restoration and increasing biodiversity.

Project objectives

This project aims to introduce 'natural' ecosystem structures of wetlands and riverbank forests to reduce inorganic nutrients - nitrates and phosphates - and salts from agricultural runoff in the entire Monegros area.

It will seek to work with local farmers in the management of the wetlands constructed. Each wetland should have a local institution in charge of its maintenance and management.

The project should achieve a general improvement in water quality of the River Flumen. It targets a reduction of the nitrate concentration below the threshold established by the Water Framework Directive (50 mg/l) and a reduction in phosphate concentrations.

The measures introduced aim to improve biodiversity in the targeted areas that have been degraded by intensive agricultural use. Specifically the project targets

LIFE09 ENV/ES/000431
CREAMAgua



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Name of contact person

Francisca GALLEGO OLIVA

Duration of project:

48 months (01/01/2011 - 31/12/2014)

Total budget in euro:

1,884,304.00

EC contribution in euro with %:

898,677.00 (47.69 %)

Generic theme:

Water management at the scale of the river basin

the establishment of permanent populations of birds, amphibians and invertebrates in the wetlands and improved aquatic biodiversity.

Expected results

- Creation of wetlands and riverbank forests;
- Reduction of nitrates below the WFD threshold in the River Flumen;
- Reduction of phosphates in the river basin;
- Enhancement of local biodiversity; and
- Integration of the project measures in the new river basin management plans stipulated by the WFD.

Demonstration project on a new process for second-generation bio fuel production: bio ethanol from citrus flesh

Project background

Spain is Europe's largest producer of citrus fruit in Europe with an output of 6 million tonnes/yr. Some 1.6 million tonnes/yr of this total goes into the production of fruit juice, meaning that Spain alone generates 800 000-900 000 tonnes/yr of peel and pulp waste. This is highly problematic waste for the environment.

The only existing alternative to landfilling of citrus fruit waste is its use in fresh animal feed. However, the high content of water in the fruit wastes - between 78% and 82% - means both high transport costs and leakage of contaminating liquids. D-Limonene is the main component of the essential oil of the peel. This can ferment and contaminate the aquifers.

Desiccation is often used to treat citrus waste. The fruit leftovers are pressed and desiccated in adiabatic tunnels with warm air. However, problems arise from the high biological oxygen demand (BOD) values in the wastewater, which are difficult to treat, and the high energy demand of the process. Additionally, this process is only aimed at the reduction of transport costs rather than an integral valorisation of the waste.

Project objectives

The CITROFUEL project's main objective is to develop a new process to improve and optimise the management and sustainable use of natural resources and waste from citrus fruit production.

The project intends to construct and run an industrial prototype for producing bio-ethanol from the biomass generated through citrus industrialisation by means of a new fermentation process. In improving prevention, recovery and recycling of citrus fruit waste, the beneficiary hopes to turn management of citrus fruit waste into an opportunity to foster the second generation biofuel sector. The beneficiary will publish a document presenting the actual state of bio-alcohol production from a technical and legal/administrative point of view. A second publication will set out the findings and conclusions of the project implementation.

Expected result

The project expects to achieve the following:

- The construction and launch of an industrial prototype plant to produce 760 kg/hour of bio-alcohol

LIFE09 ENV/ES/000433
CITROFUEL



Beneficiary:

Type of beneficiary

Professional organisation

Name of beneficiary

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Name of contact person

Salvador CARDONA

Duration of project:

25 months (01/09/2010 - 01/10/2012)

Total budget in euro:

5,605,071.00

EC contribution in euro with %:

1,681,521.00 (30.00 %)

Generic theme:

Agricultural waste

through the fermentation of by-products of citrus pulp; and

- To deliver two publications supporting take up of this innovative process.

Climate Change Adaptation of the Structural Ceramics Industry by Decreasing the Firing Temperature Using Laser Technology

Project background

The fabrication of ceramics for the construction industry (brick masonry, stoneware, roof tiles, etc.) requires very high firing temperatures, up to 1 300 °C. This implies high energy consumption and high emissions of greenhouse gases. High temperatures are generally necessary to achieve the required aesthetic finish. However, the desired mechanical and structural properties can usually be achieved at lower temperatures.

Laser technology has been used in the ceramics industry, in particular for marking and for decoration. While it has never been used in structural ceramics, previous work by the beneficiary has demonstrated its potential applications in this area. This could facilitate firing at lower temperatures, which could greatly reduce energy demand and greenhouse gas emissions.

Project objectives

The project intends to develop a new method for manufacturing structural ceramics using laser technology in the firing phase, which should allow firing at lower temperatures. In the particular case of refractory bricks, the new process will reduce the firing temperature from 1 300°C to about 900°C, without compromising the aesthetic or structural properties.

The laser technology will replace part of the firing step. Laser surface treatment will allow the conservation of the technological properties of the ceramics, even at a lower firing temperature. The new procedure will require a new drying system and a new furnace in which the laser tool will be integrated. This new approach will allow the firing temperature to be reduced by between 100 and 500 degrees, which would imply a considerable reduction in greenhouse gas emission in the structural ceramics industry.

Expected results

- A new ceramics fabrication process capable of operating at firing temperatures of 100-500°C below existing processes;
- A reduction in carbon dioxide emission of between 3563 t/year and 7750 t/year in a medium size plant (production capacity of about 330 tonnes/day);
- New ceramics pieces with technological properties appropriate to their application and new innovative aesthetic effects;

LIFE09 ENV/ES/000435
LASERFIRING



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Name of contact person

Germán DE LA FUENTE LEIS

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

2,468,358.00

EC contribution in euro with %:

1,232,179.00 (49.92 %)

Generic theme:

Reduction of emission of greenhouse gases

- The establishment of the necessary basic parameters to facilitate the future design of industrial plants using the new process.

Urban Environmental Corridor

CO2Zero, territorial axis for a sustainable culture in the city of Soria

Project background

European policies in the past years have focused on sustainable development as a strategic approach for social and economic growth. This principle is included in the Treaty of the European Union; European, national and local administrations have a shared responsibility on this issue.

The 4th European Sustainable Cities and Towns Conference adopted the Aalborg +10 Commitments in 2004. These promote strategic activities that promote environmental values and actions to fight climate change.

The city of Soria has a surface area of 272 km² and 39 075 inhabitants. Natural and cultural heritage are important assets of the city. Soria signed up to the Aalborg commitments, which seek to create genuine sustainable urban development. The city is also committed to achieving the targets of the Kyoto Protocol.

Project objectives

The Soria CO2Cero project intends to improve the environment of Soria and to fight against climate change with a series of strategic and legislative measures. Central to the project will be the creation of a corridor crossing the city and connecting different elements of its environmental and cultural heritage. The CO2Cero corridor will become a reference of municipal good practice on environmental sustainability and ecological culture.

The project will work to improve local urban environmental management in the project area through the establishment of a set of certifying criteria and the adoption of environmental sustainability as a transversal policy in planning in all local council departments. It will also establish a network of other public administrations that collaborate with similar objectives.

The beneficiary will implement specific actions to improve Soria's environment, including: pedestrian and bicycle connecting trails in public spaces; a new model of urban solid-waste management; composting; and 'dry' gardening programs. All of these actions will be based on a participatory approach with local citizens.

LIFE09 ENV/ES/000437
Soria CO2Cero



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Name of contact person

Javier Antón CACHO

Duration of project:

24 months (01/09/2010 - 31/08/2012)

Total budget in euro:

717,424.00

EC contribution in euro with %:

325,382.00 (45.35 %)

Generic theme:

Urban design – Quality of life – Transport planning

Expected results

- Creation of the Soria CO2Cero Environmental Corridor;
- Active participation of citizens in environmental improvements within the corridor;
- Integration of environmental policies in local planning; and
- Improvement of air quality in the city and an overall reduction of CO₂ emissions and other pollutants to below Kyoto Protocol target levels.

Post-mined polluted landscapes reclamation by means of valorization of different residues

Project background

Although abandoned several decades ago, mining activities in the Murcia Region of Spain have left environmental scars that persist to the present day. The extensive mining of iron, lead, and zinc has left behind 85 mining ponds containing industrial mine tailings - the material remaining after removing the desired fraction from mined ores.

The presence of these materials in the ponds creates unfavourable conditions for plant growth. Problems include residual heavy metals, macronutrient deficiencies, high acidity, reduced water retention, and poor physical characteristics. Over time, mine residues have also leached and been transported into surface and ground water.

The most common techniques for the remediation of acid mine soils and tailing ponds involve encapsulation, topsoil addition and liming. However, in-situ treatment - immobilisation - of heavy metals is gaining increased acceptance by the scientific and regulatory communities.

An additional waste management problem in the region is presented by organic wastes coming from the pig industry.

Project objectives

The main objective of the MIPOLARE project is to evaluate, demonstrate and disseminate an alternative sustainable solution for the reclamation of mining sites based on soil amendment using two waste products - pig slurry and marble mud - and phytostabilisation.

The project aims to demonstrate in-situ soil amendment using waste materials from the pig and marble industries - which present alkaline and organic characteristics, respectively. This will neutralise surface and subsurface soil acidity, immobilise toxic elements and thereby stop their translocation from the site, and allow sustainable habitat development through the creation of a healthy soil ecosystem.

Following soil amendment, MIPOLARE will plant species tolerant to extreme soil conditions, including a high concentration of heavy metals. This will enable a process of phytostabilisation, which will decrease metal transportation by runoff, reduce the potential

LIFE09 ENV/ES/000439
MIPOLARE



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Rafael SÁNCHEZ MEDRANO

Duration of project:

48 months (01/09/2010 - 30/08/2014)

Total budget in euro:

1,791,272.00

EC contribution in euro with %:

893,836.00 (50.00 %)

Generic theme:

Site rehabilitation - Decontamination

leaching of metals and establish physical stability to reduce erosion risks.

Expected results

- The re-establishment of stable ecological conditions at two abandoned mining sites;
- An improvement in the condition of soil affected by mine tailings. In particular, an increase in pH from around 2.5 to around 7.0, an increase of about 300% in organic carbon and phosphorous, a 100% increase in soil microbial biomass, and a 100% to 400% increase in enzyme activity, as well as a decrease of around 80% in soluble metals and 70% in available metals;
- A 70% increase in plant cover;
- Demonstration of a good environmental use for 160m³ of pig slurry and 160 tonnes of marble mud per 2 ha of abandoned mining land.

Combating climate change through farming: application of a common evaluation system in the 4 largest agricultural economies of the EU

Project background

The Intergovernmental Panel on Climate Change has estimated that agriculture is directly responsible for 20% of global greenhouse gas (GHG) emissions. In Europe, this figure is around 9% of total GHG emissions. Key sources of GHG emissions in agriculture are fertiliser production and machinery.

In some countries, political instruments that promote good practice in mitigation or adaptation to climate change in agriculture are already in place. However, there is often a lack of appropriate technology, monitoring systems and institutional organisation to run ambitious programmes.

The general situation is that the direct influence of agriculture on climate change is little understood by farmers and that incentives are only focused on biodiversity and water quality.

Project objectives

The ACCIÓN AGROCLIMÁTICA project aims to develop a tool for carrying out energy and GHG audits on farms, and for identifying the most suitable crops and best practices for mitigation and adaptation to climate change. It seeks to provide a methodology that will be widely accepted by the EU-27 farming sector and applicable to most of the different agricultural systems.

The project tool will be available in five languages: English, French, German, Spanish and Italian and should be capable of providing local assessments and a framework for comparing systems and practices across European farms and countries. Four training courses will be provided on how to use this tool and a technical manual will be published.

ACCIÓN AGROCLIMÁTICA will also develop pilot demonstration action plans for energy efficiency and reduction of GHGs emissions. These will be implemented in different farming systems - including mixed dairying, cereals, intensive fruit and vegetables, ecological and subtropical farming - in the four most important farm economies of the European Union: France, Spain, Italy and Germany.

LIFE09 ENV/ES/000441
ACCIÓN AGROCLIMÁTICA



Beneficiary:

Type of beneficiary

NGO-Foundation

Name of beneficiary

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Eduardo DE MIGUEL

Duration of project:

40 months (01/09/2010 - 31/12/2013)

Total budget in euro:

1,588,990.00

EC contribution in euro with %:

794,495.00 (50.00 %)

Generic theme:

Reduction of emission of greenhouse gases

The project hopes to pave the way for an EU agreement to fund programmes to encourage farmers to apply energy efficiency and reduced GHG emission action plans.

Expected results

- Diagnostic software for energy balances and GHG emissions applicable to most European farming systems;
- Training of 24 technicians to use the tool and the publication of a technical manual;
- 120 Action Plans implemented in four different EU countries and for a variety of farming systems;
- Practical and demonstrated general practices for each farming sector to reduce energy use and GHG emissions by 10% to 40%.

The Green Deserts: new planting techniques for tree cultivation in desertified environments to face Climate Change

Project background

A variety of interconnected issues relate to climate change impacts. These include increasing levels of CO₂ in the atmosphere, traffic related emissions, soil degradation and subsequent loss of agricultural capacity and landscape, as well as loss of bio-diversity and eco-systems. One of the most devastating consequences of climate change is the desertification of areas that have previously provided important functions in terms of carbon sequestration, food production and landscape conservation. Tree planting can help overcome these problems and innovative planting techniques are required to properly regenerate some degraded areas.

Project objectives

The project's main objective is to demonstrate the feasibility and effectiveness of new tree planting techniques in desertified, poor and/or rocky areas. Innovative 'waterbox' technology (Twinboxx) will be applied to restore the sponge function of degraded soils and reinforce soils' existing capacities for supporting plant life. Waterboxes will be tested to assess their suitability as a means of capturing rain and condensation for use in cultivating Hedera (ivy) plants along roadsides, where the plants are intended to absorb traffic-related air particulates and CO₂.

The project intends to demonstrate the waterbox technology's capacity to: improve soils by stimulating the natural capacities of plants; increase success rates of planting in eroded and desert areas to above 95%; reconstruct forests; absorb large amounts of CO₂ emissions; restore eco-systems facilitating the planting of indigenous and endangered species in desertified or otherwise damaged territories; reduce water and energy use, as the technology does not require any type of irrigation; restore desertified agricultural land to economic profitability, thus increasing economic opportunities in rural areas and combating their abandonment; and possibly facilitate all-year planting, offering long-term employment and larger time spans for cultivation and reforestation.

Expected results

Results are expected to include:

- 90 % success rate of the species planted in April surviving and growing well after 3-4 years;

LIFE09 ENV/ES/000447
The Green Deserts



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

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Sven KALLEN

Duration of project:

60 months (01/09/2010 - 31/08/2015)

Total budget in euro:

2,074,518.00

EC contribution in euro with %:

1,007,997.00 (48.59 %)

Generic theme:

Forest management – Soil and landscape protection –
Desertification prevention

- Confirmation of the financial feasibility of Twinboxx technology compared with commercial alternatives;
- 80 % survival rate of species planted in July using the Twinboxx technology;
- Confirmation that the new technology does not have a negative impact on existing water resources.

Contribution of forest biomass generated in the prevention of forest fires in the EU energy strategy

Project background

Forest biomass provides a carbon store and is important for mitigating climate change. It is therefore important to protect this biomass from forest fires, which cause significant CO₂ emissions and damage both the environment and property. Forest fire risks can be reduced by managing the amount of ground-level waste biomass in forest areas. Cleared ground-level biomass can be used as a CO₂-neutral fuel when burnt in controlled conditions. Such activity provides beneficial opportunities for rural economic development.

Project objectives

The main objective of this project is to improve Enguera's capacity to protect its forest resource from fire and demonstrate new win-win rural employment opportunities that provide environmental benefits. New forest management tools and approaches will be developed to minimise fire risks. The potential of biomass as a source of renewable energy and rural employment will also be tested and evaluated.

An inventory of biomass for bio-energy uses will be produced based on representative forests within the project site. This will determine biomass features such as its calorific value and performance for generating electricity and promoting economic development in rural areas.

A new strategy document will also be prepared addressing sustainable forest management and renewable energy production using biomass generated from forest fire prevention measures. This will be in line with the EC's Action Plan on Biomass and the EU Forest Action Plan.

Expected results

- Valorisation of Enguera's forests through more effective management of all their resources;
- Mitigation of climate change by reducing CO₂ emissions via use of waste forest biomass for energy generation and the establishment of optimum conditions for its use;
- Reduced risk of forest fires in the project area; and
- Preparation of an official document for Enguera regarding new criteria to manage forests by using waste biomass as clean energy source.

LIFE09 ENV/ES/000450
BIOENERGY & FIRE PREV.



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Santiago ARÉVALO LLÁCER

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

1,024,298.00

EC contribution in euro with %:

511,999.00 (49.99 %)

Generic theme:

Forest management – Soil and landscape protection –
Desertification prevention

Demonstration of zero waste cycle by the complete valorization of residues from refining of used vegetal oils

Project background

The increasing amount of waste generated by the olive oil sector is an environmental problem. Inadequate management and uncontrolled disposal have affected both water bodies and nearby communities and raised health concerns. Landfill has been a usual disposal method for solid and liquid wastes containing a high percentage of organic compounds. But the current sites and methodologies used for landfill disposal do not comply with the European Landfill Directive (1999/31/EC).

When waste vegetal oil (WVO) is collected, it goes through (i) a pre-treatment process to eliminate moisture and solid particulate matter, (ii) a refining process to eliminate free fatty acids and other undesirable compounds, and (iii) it is sent for biodiesel production. In this management chain, the residues from the pre-treatment process, as well as the by-products of the refining process, can be used either as substrate for biogas production, or burned in thermo-electrical turbines.

Project objectives

The 'VALUVOIL' project aims to demonstrate an environmentally- and economically-feasible method to improve the anaerobic digestion of residues and by-products generated from the processing of used vegetal oil. The project will adopt a life-cycle approach, taking into account all parameters, including: energy savings, transportation expenses, CO₂ emissions, water consumption, utilisation of the residues for other industrial processes, recycling, and minimising toxic compounds. The anaerobic digestion will transform residues from the pre-treatment process (RPP) and by-products from the refining process (BRP) into biogas for its direct application as a route of thermo-electric energy.

An added value, in order to complete the zero waste cycle of the whole process, the organic residue (digestate) of the RPP and BRP digestion will be valorised into organic compounds for application in plants and soils as biostimulants and biofertilisers respectively; and into 'syngas', which will be used to generate power for the treatment refining facility.

LIFE09 ENV/ES/000451
VALUVOIL



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

CARTIF Foundation

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Name of contact person

Óscar LEÓN

Duration of project:

30 months (01/09/2010 - 28/02/2013)

Total budget in euro:

1,041,463.00

EC contribution in euro with %:

520,731.00 (50.00 %)

Generic theme:

General – Waste management

Expected results

The project expects to achieve the following:

- To transform, by anaerobic digestion, residues from the pre-treatment process (RPP) and by-products from the refining process (BRP) into biogas, with a yield of 25% higher than with conventional reactors;
- To establish five micro-organism strains to improve the yield of the digestion by inoculation;
- To treat 100% of the waste produced in the processing of WVO using environmentally friendly solutions;
- To achieve a yield of at least 75% in small-scale (10-litre) pilot reactors; and
- To construct a prototype plant with a 2 000-litre capacity that will maintain the conditions and yields achieved in the small-scale laboratory experiments.

Evaluation of manure management and treatment technology for environmental protection and sustainable livestock farming in Europe

Project background

The negative environmental impacts of intensive pig farming are considerable and well-known. This includes air, water and soil pollution, as well as social nuisance and health impacts. Environmental technologies and management strategies offer a real potential to minimise these impacts, but these are often impeded by the lack of well-defined market conditions and variations in regulations among EU countries. Moreover, there is still a gap between the understanding of the impacts of manure management and the take-up of this knowledge by policy makers.

Project objectives

The project aims to:

- Demonstrate that the use of a treatment technology and an adequate management scheme for pig manure can contribute to a reduction of GHG emissions, while at the same time improving the situation of farmers;
- Improve environmental sustainability of pig farming by increasing the use of manure treatment in Europe;
- Unify criteria for the evaluation of different manure treatment technologies and management schemes;
- Develop and test a decision supporting and planning tool to evaluate different manure treatment and management strategies in various European countries: Italy, Denmark, Poland, and various sites in Spain;
- Define the fertilising properties of directly applied manure and of treated waste;
- Evaluate the know-how related to the treatment technologies and management methods within the different countries and areas in Europe.

Expected results

- A system of indicators and a common evaluation protocol for the evaluation of existing pig manure treatment technologies;
- The evaluation of several treatment and manure management methods, according to the agreed protocol: three separation systems, nine anaerobic digestion systems, six nitrogen removal technologies,

LIFE09 ENV/ES/000453
MANEV



Beneficiary:

Type of beneficiary

Development agency

Name of beneficiary

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Arturo DAUDÉN IBÁÑEZ

Duration of project:

48 months (01/01/2011 - 31/12/2014)

Total budget in euro:

4,165,832.00

EC contribution in euro with %:

2,076,153.00 (49.84 %)

Generic theme:

Agricultural waste

two nitrogen recovery technologies, two composting techniques and one direct application of manure to crop lands;

- The evaluation of these methods/technologies based on the following criteria: (i) GHG emissions, (ii) eutrophication, (iii) acidification, (iv) energy balance (kWh), (v) economic feasibility, (vi) health, (vii) legal framework and (viii) social awareness;
- A decision support and planning tool for selecting and designing an efficient manure management system adapted to local requirements; and
- The validation of the tool in two regions: Warmińsko-Mazurskie Voivodeship (Poland) and Murcia (Spain).

Utilisation of recovered wood and rubber for alternative composite products

Project background

The recycling of waste wood products is increasing. This increases the total volume of CO₂ stored as wood-based products, broadening the life-cycle of the fixed carbon in the newly recycled products. However, such wood waste currently contains physical and chemical contaminants such as metals, stones, glues, paints and melamines.

Concerning rubber products, an estimated 1.5 billion tyres are discarded every year worldwide, including 250 million in Europe. The disposal and incineration of tyres releases potentially harmful compounds into the environment, e.g. polyaromatic hydrocarbons (PAHs), benzene and phenol, which have carcinogenic properties. Although some local programmes for recycling have been started around Europe, few are targeted at a national or even a regional level.

Project objectives

The main aim of the 'WOODRUB' project is to develop, test and demonstrate innovative, environmentally-friendly products made from recycled wood and rubber from used tyres. Construction materials will be developed from these innovative products and demonstrated to different stakeholder groups. The products will operate as carbon sinks –increasing the carbon storage in buildings using the products, and replacing other less eco-friendly building materials.

The recovered wood category to be used will be waste from households (furniture, doors, windows, floors, etc.). This material is chemically contaminated by glues, lacquers, paints and coatings. After collection, the waste wood will be processed into chips without any prior biological, thermal or chemical treatment. This is an innovative approach since the removal of all these chemicals is difficult and costly.

Recovered rubber tyres will be used with recovered wood chips or sawn timber for the production by thermal processes of innovative composite products. An environmental study and a lifecycle assessment (LCA) will be carried out on the developed products.

Expected results

The projects plans to focus development work on the following wood/ rubber products:

LIFE09 ENV/ES/000454
WOODRUB



Beneficiary:

Type of beneficiary

Professional organisation

Name of beneficiary

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Name of contact person

Jose-Vicente OLIVER

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

1,838,968.00

EC contribution in euro with %:

918,192.00 (49.93%)

Generic theme:

General - Waste management

- DIY building products such as construction panels, insulating panels and bricks.
- Construction industry products e.g. panels, safety side barriers for highways and mixed bitumen (asphalt) products.

The main expected outputs include:

- Analyses of quantities and quality of recovered wood and rubber in Europe;
- Processing techniques for recovered wood and waste rubber will be developed;
- Operations for recovered wood-rubber/tyre-bonding systems will be defined and established;
- Production processes will be scaled-up and prototype guidelines for manufacturing defined; and
- LCA results, cost values and eco-efficiency rates will be calculated.

Sustainable water management at regional scale through Airborne Remote Sensing based on Unmanned Aerial Systems (UAS)

Project background

The EU Water Framework Directive – WFD (2000/60/EC) requires Member States to implement monitoring programmes for a comprehensive overview of the ecological and chemical status of water quality within each river basin. Numerous techniques and methods are currently used for water monitoring, however most of them present various problems. These include problems of cost and reliability. The use of multispectral cameras is generating interest in the environmental monitoring field. Used in combination with current methods, this could contribute to improve the spatial monitoring of water bodies.

Project objectives

The project's overall aim is to develop a cost-effective, spatial tool for more efficient, sustainable, water monitoring and management, in line with WFD requirements. The core concept of this project is a new, remote sensing approach to the monitoring of water resources. This is based on UAV (unmanned aerial vehicles) technology, able to cover extensive water areas and to provide data that could also be extrapolated to air and soil. The idea is to bridge the gap between satellite remote sensing (with critical limitations in spatial and temporal resolution) and airborne remote sensing (very expensive at regional scale).

Specific project objectives are:

- To test two innovative airborne remote sensing systems, with (i) a high resolution thermal infrared camera and (ii) a multispectral camera – both using an unmanned helicopter as an aerial platform;
- To demonstrate the economical and technical feasibility of the tool, particularly in the fields of: (i) detection of leaks and seepage in hydraulic infrastructures and waste storage facilities, (ii) identification of water needs in irrigated fields, (iii) detection of discharges into river basins, (iv) monitoring of the ecological and chemical status of surface waters, and (v) detection of springs and water extraction for inventory purposes.

Expected results

- A demonstration prototype instrumented with a high resolution thermal infrared (IR) camera (8-12 μm), with a maximum take off and landing weight of 75 kg and capable of flying for 90 minutes;

LIFE09 ENV/ES/000456
AG_UAS



Beneficiary:

Type of beneficiary

Professional organisation

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Name of contact person

Teófilo VITORIA

Duration of project:

36 months (01/10/2010 - 30/09/2013)

Total budget in euro:

2,384,688.00

EC contribution in euro with %:

1,192,344.00 (50.00 %)

Generic theme:

Water management at the scale of the river basin

- A second prototype with a 20 kg multispectral camera of 20 kg and 30 minutes endurance designed for studies of irrigation needs and water sampling and analysis;
- Spectral, geo-referenced, imaging information obtained from the prototype applications, and the real operating costs for data collection;
- Definition of the best procedures to carry out the proposed environmental studies including suitable atmospheric conditions for maximum detection, flight conditions, and on board instrumentation and operating parameters

Improving the environmental performance of publications from design to lecture!

Project background

The pulp and paper industry generates large amounts of air and water pollutants and waste products. It is also one of the largest users of raw materials, including fresh water, energy and forest fibres. Packaging and printing inks, which are produced from chemical mixtures, sealing and reinforcing components, can have an adverse environmental impact. Whilst there have been many initiatives to reduce the impact of the pulp, paper, printing and publishing sectors, they have rarely considered the entire book production process. Therefore, there is a need to apply a more integrated product policy approach to the publishing sector, considering the product lifecycle. There is also an urgent need to compile and homogenise the tools available for assessing the environmental performance of products such as eco-labels and Environmental Management Systems.

Project objectives

The objective of the project GREENING BOOKS is to improve the environmental performance of the publishing sector. This project aims to integrate into a dynamic scheme existing tools, such as Ecolabel, EMAS, Eco-design and LCA, as well as the latest technologies. The idea is to develop an innovative instrument aimed at all stakeholders in the entire lifecycle of the publishing process, in order to reduce its environmental impact.

The project will also develop a software tool that calculates the environmental impact of the publication before being produced, allowing for necessary aspects of the process, starting with design, to be considered. This tool will be developed from similar existing tools, but adding an innovative and integrated approach based on a user-friendly model.

The project will also develop an application, available on the project's website, which provides procurers with information on the environmental performance and carbon footprint of books/magazines – and, hence, raise their awareness and increase their proactive role in the 'greening' process. It will be also useful for public administrations implementing green procurement.

Expected results

- Guidelines on eco-design for books and magazines in order to improve environmental performance;

LIFE09 ENV/ES/000457
GREENING BOOKS



Beneficiary:

Type of beneficiary

Research institution

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Sandrine SCHWARTZ

Duration of project:

36 months (01/11/2010 - 31/10/2013)

Total budget in euro:

723,837.00

EC contribution in euro with %:

361,918.00 (50.00 %)

Generic theme:

Integrated environment management

- A software tool for designers, publishers, editors and professionals in order to promote greener publishing. The tool will allow the environmental impact of a future publication to be calculated;
- Pilot experiences that will lead to the production of two demonstration 'green' books and one demonstration 'green' magazine, developed using the software tool and taking into account the best available environmental practices identified during the project.

Green (environmentally friendly) management of cattle farm waste and its repercussion on the GHG emissions

Project background

In the past few years, production units have intensified in the livestock sector. This process has increased productivity, but also resulted in the generation of greater quantities of manure. Manure from farms represents a threat to the environment in the form of greenhouse gas (GHG) emissions and the release of excess nitrogen and phosphorus into the soil and water. The need to develop innovative means of managing manure and/or using it differently is of the utmost importance to the agricultural sector.

At the same time, large areas of Spain are presently under threat of desertification, loss of soil fertility, salinisation and erosion. Climate change processes are also expected to result in a loss of carbon in the soil as temperatures rise. In this context, the contribution of organic matter to soils will be of crucial relevance.

Project objectives

The aim of this project is to demonstrate good practices in the management of agricultural organic waste that can help to reduce the environmental impact of cattle farms and reduce their GHG emissions.

Project actions will focus on using agricultural waste for composting and methane production. An innovative system is proposed that mixes liquid manure from cattle farms with other types of organic waste (swine, bird). Such a system will produce a natural fertiliser and methane for energy recovery. The ultimate goal is that farmers adopt these waste management strategies in order to produce fertiliser and energy, thus avoiding the use of other external resources and reducing the transportation of waste. The project will also promote the recovery of deteriorated soil through the application of compost.

Expected results

- The agreement of six cattle farms (three from each participating region) to follow the management guidelines prepared by the technical team (with an expected attendance of around 100 farmers at the theoretical lessons in each region);
- The participation of two plant nurseries in a study of the fertilising properties of the compost;
- The adoption of the above mentioned methodology as the system for cattle waste management in farms of Galicia, Extremadura and other regions;

LIFE09 ENV/ES/000459
ECOREGA



Beneficiary:

Type of beneficiary

Professional organisation

Name of beneficiary

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Name of contact person

Paula CONTE

Duration of project:

24 months (01/01/2011 - 31/12/2012)

Total budget in euro:

599,500.00

EC contribution in euro with %:

282,250.00 (47.08 %)

Generic theme:

Agricultural waste

- A reduction in the use of inorganic or synthetic fertilisers on the study farms;
- A reduction in GHG emissions.

End life vehicles: innovative and sustainable technology for achieving European Directive targets

Project background

Recycling rates in the EU are increasing, in part thanks to the the End-of-Life Vehicles (ELV) and the Waste Electrical and Electronic Equipment (WEEE) Directives (2000/53/CE and 2002/96/CE). Today, more than 85% of ELV materials have to be recycled; the next step (2015) is to reach a 95% recycling rate. Europe produces 12 million tonnes/yr of electrical and electronic waste and more than 14 million vehicles/yr reach the end of their useful life. Recycling technologies still have room for improvement in order to achieve the targets set in the WEEE and ELV directives. For instance, there are problems treating dark plastics, rubber and difficult input materials such as light shredded fractions.

Project objectives

In order to solve the troubles detected with dark plastics, rubber and other difficult material, the project will develop an innovative sorting unit to increase the recycling rate and to promote the reuse or valorisation of different components from shredder waste. Other objectives include:

- To reduce the amount of solid waste from the automotive and electronic-electric sectors that is disposed in landfills;
- An alternative energy source: the use of this innovative technology will allow the separation of waste that it is not reusable or that cannot be valorised. As a result, residue will be more specific and better classified in order to obtain the maximum energy and the fewer pollutants to the atmosphere; and
- Separating and sorting the waste streams to enable residue to be used for energy generation and to develop potential new markets and uses. The sorting unit designed by the project will also reduce management costs from waste disposal to landfills and contribute to improved lifecycle maintenance for vehicles and electronic and electrical goods.

Expected results

- The implementation of an innovative and environmentally feasible installation that will lead to improvements in recycling technology;
- The evaluation of some residual streams as by-products, to be reused in different applications in the automotive and electrical-electronic industries or in other sectors;

LIFE09 ENV/ES/000460
ELVISUSTECH



Beneficiary:

Type of beneficiary

Professional organisation

Name of beneficiary

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Name of contact person

Juan Carlos CASTELL

Duration of project:

30 months (01/10/2010 - 31/03/2013)

Total budget in euro:

1,972,942.00

EC contribution in euro with %:

964,595.00 (48.89 %)

Generic theme:

End-of-Life Vehicles (ELV's) and tyres

- An increase of sorted material to be reused in other processes and the reduction of environmental contamination by minimising the amount of materials going to landfill;
- The creation of material streams for new applications, such as energy sources, as well as for the production of other new products for the plastics industry. Expected energy value is between 2-3 MW. Forecast production capacity for the prototype is 1 tonne/hr;
- The possibility of transferring this new technology to other industrial sectors.

Demonstrative solutions to reduce noise pollution in industrial areas, using finishing technologies in textile materials

Project background

In 1996, the report, 'Future Fight against Noise,' showed that 20% of the total EU population are exposed to sound levels that scientists and health experts consider unacceptable and which causes a variety of harmful impacts on health and the environment. More than 170 million people live in so-called "grey zones", where the noise level is considered high. There has been a growing awareness of acoustic pollution in the last decade, but there is still enormous room for improvement, especially with regards to noise produced by the industrial sector. The use of textile materials in infrastructure has a great potential to provide significant improvements in acoustic absorption.

Project objectives

This project aims to validate demonstrative solutions to reduce noise pollution in industrial estates close to urban areas through the use of textile finishing technologies. The idea is to define specific textile materials that have interesting properties for sound absorption and use them as constructive elements in industrial facilities. The project will also test different kinds of finishing processes and improve material properties.

Specific objectives:

- To define specific textile materials that have valuable properties, such as sound absorption, and moreover that can be improved and optimised. One option will be to reuse the textile waste from industrial processes – e.g. resins, spinning powder, cut-offs, selvages and defective items;
- To work with different kinds of finishing processes, mainly electro-spinning, plasma surface treatments and coatings to improve the result of basic textile materials;
- To validate the demonstrative solutions or prototype materials developed in the acoustic field to reduce noise pollution – e.g. noise barriers, encapsulated systems;
- To study the compatibility of the developed solutions with the prescriptions of the environmental noise directive (2002/49/EC).

Expected results

The project will demonstrate a satisfactory and efficient solution for the reduction of noise pollution in industrial areas, using finishing technologies in tex-

LIFE09 ENV/ES/000461
NOISEFREETEX



Beneficiary:

Type of beneficiary

Professional organisation

Name of beneficiary

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Rosa LÓPEZ

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

995,834.00

EC contribution in euro with %:

497,167.00 (49.92 %)

Generic theme:

Air quality management and noise abatement

tile materials. The solutions will be validated in a real industrial installation. It is expected that the project will:

- Find textile materials with specific acoustic properties (5-10 different base textile materials);
- Characterise the acoustic properties and fire behaviour of the selected textile materials;
- Improve the acoustic base-properties with finishing processes in order to improve the absorption coefficient by more than 20%;
- Select the five best materials for acoustic purposes. These materials will be validated with software simulations and laboratory tests;
- Study the compatibility of the developed solutions with fire regulations.

Development of Energy Efficiency in Architecture: Energy Renovation, Innovation and ICTs

Project background

The need to optimise energy consumption in the home is widely recognised, but more work is needed. Information and communication technology and tools, in particular, represent a great opportunity for improving energy use and efficiency in the housing sector. Energy consumption is an important criterion to consider in the new construction projects as well as during the renovation of old buildings. In Extremadura, current regulations have focused mainly on new constructions. However, many houses urgently need renovating. There is a great potential for developing building renovation strategies and practices that incorporate energy sustainability principles.

Project objectives

The purpose of the LIFE project is to test and propose concrete solutions for reducing the environmental impact of the housing construction sector. The project will focus on three main areas: renovation; innovation in new constructions; and the use of information and communication technology.

Specific objectives are to:

- Improve the quality of buildings, an important way of achieving long-term solutions to the problems of high energy bills and a better quality of life;
- Incorporate information and communication technologies to improve the environmental performance of buildings;
- Create a methodology for calculating the optimal cost of energy performance requirements for buildings;
- Incorporate energy management systems through the use of ICT; and
- Incorporate elements of water savings (which indirectly contribute to energy savings as well).

Expected results

- The creation of a geographic information system of all existing building in Extremadura and a subsequent 'energy map';
- Energy improvement strategies to be used in experimental houses, and comparisons made with standard housing;
- The definition of a system of evaluation of existing energy-efficiency solutions;

LIFE09 ENV/ES/000466
EDEA-RENOV



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Name of contact person

José TIMÓN TIEMBLO

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

3,281,953.00

EC contribution in euro with %:

1,454,477.00 (44.32%)

Generic theme:

Sustainable building

- The creation of an office of energy management in the district of Santa Engracia (social housing) for information and participation purposes;
- The implementation of energy improvement solutions in the renovation of housing buildings in the district of La Paz-San Lazaro;
- The publication of a user's manual and a good practices guide on sustainable building materials.

Substitution of conventional treatment of raw river water by ultrafiltration membrane technology

Project background

The increasing demand for water, both in terms of quantity and quality, is creating chronic water shortages in many countries throughout the world. This shortage comes in the face of uncertainty over the potential impact of global climate change on water supplies. Severe droughts and the potential impact of global climate change could lead to a decrease of quality parameters in water bodies. On the other hand, regulations related to drinking water quality are more and more stringent in order to avoid sanitary problems.

The use of reverse osmosis (RO) membranes is emerging as a key technology for water treatment. RO membranes have proven to be effective for the treatment of low quality river water and relevant knowledge has been gathered through several initiatives in the European context. However, pre-treatment units for RO need to be carefully assessed with regards to limitations with regard to high consumption of chemicals and high raw water losses.

Project objectives

The project aims to demonstrate the feasibility and economic viability of direct ultrafiltration (UF) pre-treatment for RO as an alternative to conventional pre-treatment. The proposed alternative technology should reduce costs and environmental impacts.

The specific objectives are to:

- Demonstrate on a pilot scale that direct UF can be an efficient alternative to conventional pre-treatment for RO at drinking water treatment plants;
- Assess the efficiency of three different direct UF prototypes with different configurations and membrane materials;
- Evaluate levels of reagent consumption and water loss by the prototypes in comparison with conventional methods;
- Perform a lifecycle analysis (LCA) and cost-benefit analysis (CBA) of the new and conventional treatment technologies;
- Develop adequate tools for scaling up the design and costs from prototype to full-scale plant and for adapting the conditions of the pilot plant for full-scale implementation.

LIFE09 ENV/ES/000467
UFTEC



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Name of contact person

Xavier BERNAT

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

2,156,157.00

EC contribution in euro with %:

1,050,789.00 (48.73 %)

Generic theme:

Other area – Water management

Expected results

- Full implementation and operation of the proposed direct UF prototypes as planned;
- Successful optimisation of the design and operation conditions to achieve: 1) raised water production in terms of quality and quantity; 2) reduction of energy consumption (reduced pressure requirement); 3) reduction of cleaning reagents; and 4) increase of membrane lifetime;
- Demonstration of reduced water losses during the current RO pre-treatment;
- Evaluation of the LCA of the three prototypes and the conventional pre-treatment scheme. Identification of the critical points and the pollution transfer likely to occur between the different units of one treatment life cycle (i.e. construction, operation, waste generation); and
- CBA of the different treatment technologies.

Development & demonstration of a complete system to reduce the use of chemical products in the D.O. RIAS BAIXAS

Project background

Galicia is a Spanish region located in the northwest of Spain. The project will focus on the main Galician denomination of origin for wines and the main white wine denomination of Spain, Rías Baixas.

The Rías Baixas is located mainly inside the province of Pontevedra and consists of an area of 3 500 ha and involves more than 6 500 winegrowers living in 33 different councils: from the area of the Ulla river to the Miño river (Spanish-Portuguese border). The production of the 2008 vintage was 18 500 000 kg of (mainly Albariño) grapes.

The area contains granitic soils (which allow for the easy drainage of rainwater) and is subject to Atlantic weather (rainy but temperate): the climate is favourable to the development of fungus attacks that cause losses of up to 50% in grape production.

Consequently, winegrowers use large quantities of chemicals to avoid the diseases caused by fungus attacks every year, together with chemical fertilisers to avoid the loss of nitrogen caused by the rainy weather and the structure of easy draining granitic soil. As a result, wine production costs are high in Galicia, and production methods pose a risk to the environment.

The run-off of chemical products has an impact on the area's many rivers and its coastline, much of which is part of the Natura 2000 network and, moreover, important for the fishing industry.

Project objectives

The project aims to demonstrate the need and viability of sustainable management of wine production in the vineyards of the Rías Baixas within an integrated system.

Specific objectives are:

- To demonstrate the feasibility of creating an 'Integrated Control System to Minimise the Environmental Risks' based on a net of meteorological sensors located in vineyards, in order to minimise the use of chemical products to those strictly necessary (i.e. when there is a probability of fungus attack);

LIFE09 ENV/ES/000469
ATLANTIC VINEYARDS



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Name of contact person

Marina PIÑEIRO NOVO

Duration of project:

28 months (01/09/2010 - 31/12/2012)

Total budget in euro:

970,470.00

EC contribution in euro with %:

440,235.00 (45.36 %)

Generic theme:

Risk assessment – Pollution control

- To demonstrate that by using a limited quantity of chemical products it is possible to be more productive and improve quality – yielding better economic results and minimising environmental risks; and
- To disseminate the idea of reducing the use of chemical treatments in the vineyards as an added value for wineries and the community – all project actions will be included in an Environmental Management System.

Expected results

- A 15% reduction in the use of chemical products for vineyard treatments. This will mean that the pollution caused by chemical deposits on water and soil will be reduced at the same rate, with a knock-on effect on production costs for winegrowers; and
- A 5% reduction in the use of chemical nitrogen fertilisers.

Project for the comprehensive restoration of the endorheic basin of Los Tollos (El Cuervo and Jerez de la Frontera, Sevilla and Cadiz respectively)

Project background

The project's objective is to restore the soil that has been degraded as a result of the presence of an old mine located in the endorheic (closed) basin of Los Tollos lagoon. The open cast mine, which functioned in this area from 1976-98, extracted attapulguis (a natural biodegradable absorbent used in industry and for cat litter) in several places.

Los Tollos is one of the most environmental valuable lagoons in Andalucía. Since 1986, it has been included in the "Plan Especial de Protección del Medio Físico de la Provincia de Cádiz" and currently is a designated Special Area of Conservation (SAC). Before the advent of mining, the area was an important site for numerous bird species, including several threatened species, such as the marbled duck (*Marmaronetta angustirostris*), white-headed duck (*Oxyura leucocephala*), and red-knobbed coot (*Fulica cristata*).

Project objectives

The LIFE project's main objective is to restore the topography and recover the degraded soil in the endorheic basin of la laguna de Los Tollos and surrounding areas. Other objectives are to:

- Eliminate the connection between the surface aquifer (saline) and the freshwater aquifer;
- Re-establish the surface hydrology processes;
- Re-establish the lake's natural hydro-period;
- Re-establish the lake's habitat and biodiversity function;
- Control the erosion of the endorheic basin;
- Prevent diffuse contamination of the lake's water;
- Increase the environmental value of the catchment basin by improving the habitat's biodiversity;
- Integrate the degraded area into the urban centre of El Cuervo; and
- Value the area as a destination for tourism and environmental education.

Expected results

- Restoration of the endorheic basin to achieve a state similar to that existing before the mining operation. The hydrogeological processes will be re-established, eliminating the connection between the saline surface aquifer and the fresh water aquifer of the pliocene sands;

LIFE09 ENV/ES/000472
LOS TOLLOS



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Name of contact person

Esperanza PEREA ACOSTA

Duration of project:

51 months (20/09/2010 - 31/12/2014)

Total budget in euro:

7,947,463.00

EC contribution in euro with %:

3,123,236.00 (39.30 %)

Generic theme:

Site rehabilitation - Decontamination

- Reduction of diffuse contamination of the lake water generated by agricultural activity through a perimeter vegetation band;
- Prevention of lake silting by controlling sediments provided by the river network;
- Establishment of forest uses in the catchment basin in order to change the run-off dynamics of water, bringing it back to that existing before agricultural intensification;
- Re-establishment of the lake's ecological processes (including its natural hydroperiod) and resalinisation of the substratum, which will allow the lake's biological communities to develop; and
- Re-establishment of the ecological processes in the catchment basin. Introduction of forest uses (copses and enclosures) in an agricultural environment will make it possible to establish plant protection areas where insects and herbaceous flora can develop. Both communities provide food for the area's fauna. Another related measure is the generation of spaces for breeding, such as installations for fauna and ligneous vegetation.

Prevention of vegetable waste generation and reuse for animal feed in the Autonomous Community of the Basque Country (ACBC)

Project background

The environmental framework plan of the Autonomous Community of the Basque Country (ACBC) has established some specific objectives for 2012, such as reducing by 45% the amount of municipal solid waste sent to landfill, and valorising as much as possible biodegradable waste.

In the ACBC there are two municipal solid waste treatment plants and six landfills. These facilities receive some 8 000 tonnes/yr of waste from wholesale markets and big food distributors and 7 000 tonnes/yr of food waste from small supermarkets mixed with household waste. An additional undefined quantity of food waste from the food industry ends up in waste treatment plants. Although some of these waste generators separate waste streams (e.g. paper, plastic, glass) to facilitate recycling, this is not done in 100% of the cases.

Project objectives

The LIFE project proposes the development of a prototype to automatically separate the organic fraction from the packaging, thus increasing the amount of vegetal fraction that can be reused.

Another key objective of the project is to design, prove and validate an action plan to make use of the vegetal food surplus generated in food retailing by transforming it into animal feed. The proposed approach involves demonstration of an innovative methodology to recover vegetal food wastes in a hygienic way.

The project expects to achieve a recycling rate of more than 70% of the generated vegetal wastes, which is more than 7 000 tonnes/yr of fruit and vegetal waste, using a methodology that can be easily transferred to other European countries with a similar environmental problem.

Other objectives include:

- A complete inventory of the vegetal wastes generated in the ACBC;
- Characterisation of the vegetal wastes (including nutritional and sanitary parameters);
- Definition of conditions and technology needed for vegetal meal production from waste vegetables;
- Development of an action plan to valorise vegetal wastes and produce meal for animal feed production;

LIFE09 ENV/ES/000473
CLEANFEED



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

Dirección Industrias Alimentarias - Consejería de Medio Ambiente, Planificación territorial, Agricultura y Pesca

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Name of contact person

Luis Javier TELLERIA

Duration of project:

48 months (01/10/2009 - 30/09/2013)

Total budget in euro:

997,276.00

EC contribution in euro with %:

489,138.00 (50.00 %)

Generic theme:

General – Waste management

- A full-scale demonstration of the new proposed management practices for vegetal fractions generated at wholesale markets, public markets, supermarkets and by the food industry; and
- Inclusion of the new raw material in the European Commission's catalogue for animal feed.

Expected results

- Reduction by 70% of the current organic waste volume managed at incinerators and dumps;
- Reuse of 7 000 tonnes of vegetal fractions as raw material for producing feed;
- Modification of the waste management plan of the Basque Country to enhance the new proposed management for vegetal fraction by-products; and
- The development of legislation to restrict the dumping of vegetal food fractions from the food industry and distribution into dumps and other urban solid waste deposit installations.

First Implementation Of A New Waste Recovery Technology Converting The Msw From A Representative Urban Region Into Synthetic Diesel Fuel

Project background

Waste generation is a serious social and environmental problem for modern economies. Inappropriate waste management can impact on the climate, ecosystems and human health. However, when waste is correctly managed it can become a resource, helping to conserve natural resources and contribute to sustainable development objectives.

In Spain, a high proportion of waste is still disposed of in landfill. However, the national plan for waste 2007-15 encourages new practices based on selective collection, recycling, and stabilisation and recovery of non-useful fractions.

Project objectives

The project aims to develop the first full-scale demonstration of catalytic depolymerisation technology for the processing of municipal solid waste (MSW) produced in the Catalonian district of El Segrià (177 000 inhabitants). The demonstration plant will be capable of treating up to 30 000 tonnes per year of mixed MSW. The catalytic depolymerisation technology aims to convert mixed biodegradable MSW (i.e. the non-recyclable fraction) into a synthetic diesel, which can replace conventional diesel.

Specific objectives include:

- To demonstrate, on a full-scale, the effectiveness, versatility, technical potential and economic feasibility of the new waste recovery technology;
- To replicate the project actions in several municipal areas;
- To provide an effective solution for diverting waste from landfill;
- To position the company as a 'neutral carbon emissions' enterprise (SANEA intends to utilise the synthetic diesel obtained from the waste recovery process to fuel a fleet of trucks and therefore become energy self-sufficient);
- To improve current technologies and demonstrate BAT in the processing of residual MSW fractions.



Beneficiary:

Type of beneficiary

International enterprise

Name of beneficiary

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Ferran ITURBE

Duration of project:

24 months (01/10/2010 - 30/09/2012)

Total budget in euro:

4,871,800.00

EC contribution in euro with %:

2,338,400.00 (48.00 %)

Generic theme:

Municipal waste (including household and commercial)

Expected results

- The region's first catalytic depolymerisation plant for processing residual MSW – the rejected fraction from the mechanical treatment process – capable of treating the waste generated by 177 000 inhabitants;
- The conversion of around 50% weight for weight – i.e. for each 100 kg of waste input, 50 kg of diesel will be obtained;
- The new waste treatment process will divert around 37 000 tonnes of waste per year from Montoliu's landfill;
- CO₂ emissions stemming from waste landfill operations will be reduced by 43 796 tonnes per year.

Demonstration Of Models for Optimisation of Technologies for Intelligent Construction

Project background

The environment and health problems associated with the emission of greenhouse gases (GHG) into the atmosphere are one of the main concerns of the European Union. Atmospheric pollution is the primary cause of environment-related disease in Europe and is the principal cause of global climate change.

European environment regulations and strategies are dedicated to combating climate change and to meeting international objectives for reducing GHG emissions (Kyoto agreement).

Heating and lighting in buildings consumes more than 40% of the total energy used in the EU. Therefore, to meet the objective of a 20% reduction in GHG emissions in the EU by 2020, the promotion of policies to maximise the energy efficiency of buildings is essential.

Domotics is a term used to describe 'home automation', or the automation of household appliances. It is an emerging technology that uses automated or semi-automated control of features such as lighting, heating and ventilation systems in the home. Its intelligent use can also improve the efficiency of energy consumption of these household features.

Project objectives

The main objective of the DOMOTIC project is to demonstrate and quantify the CO₂ emissions reduction potential of using intelligent technologies and models of construction in buildings attracting large numbers of visitors.

The project will introduce three models of the latest generation of house automation into three demonstration buildings, such as education centres, institutions and public buildings.

Through these pilot studies, the beneficiary hopes to demonstrate the benefits and feasibility of domotics. The project will thus define and disseminate models for domotic control and regulation, serving as benchmarking standards for certain typologies of buildings, such as education centres and institutions, universities, museums and libraries. This will contribute to the objectives of the 2002/91/CE Directive on energy performance of buildings and annex III of the Directive 2006/32/CE on energy end-use efficiency.

LIFE09 ENV/ES/000493
DOMOTIC



Beneficiary:

Type of beneficiary

NGO-Foundation

Name of beneficiary

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Name of contact person

María Nieves ZUBALEZ MARCO

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

2,355,198.00

EC contribution in euro with %:

1,113,799.00 (47.29 %)

Generic theme:

Sustainable building

Expected results

- Validation of three "good building governance" models based on domotic applications;
- Energy savings of up to 50% for air-conditioning and 80% for lighting, compared to conventional facilities;
- For the three pilot buildings, this should equate to total annual savings of over 750 000 Kw of electricity and over 40 000 m³ of natural gas. This would equate to a reduction in GHG emissions of 400 tonnes.

Development of Life-Cycle e-Tools for improving the environmental performance of European Graphic SMEs

Project background

The European graphic sector makes a significant contribution to the European economy. It has an annual turnover of over €125 billion and employs more than 1.2 million people. It is made up of over 106 000 companies, 95% of which are small and medium-sized enterprises (SMEs).

The production life cycle of graphic products gives rise to different environment impact, through the consumption of raw materials, the distribution of products, and the use of production techniques such as offset printing, whereby inked images are transferred ('offset') from a plate to a rubber blanket and then to the printing surface.

Currently, the European graphic sector consumes over 8 million tonnes of paper and board annually, with 7% growth expected by 2013; over 1 million tonnes of ink, with 25% growth projected by 2012; and over 200 000 litres of chemical additives, with 11% growth by 2013.

The graphics sector is characterised by a lack of management skills and experience to develop and implement environmental policies. There is also a lack of appropriate tools and information about promising environmental technologies, processes and products.

Project objectives

The SustainGraph project aims to develop an eTool for assessing the environmental impact of graphics products throughout their life-cycle. It will identify and promote good practice in the development of new, sustainable graphics products and services in order to guide European SMEs.

The eTool will be based on the European Printing Eco-indicators System and on current best practice. Its implementation by European SMEs will help to:

- Improve the environmental performance of European graphics SMEs throughout their production life-cycle;
- Ensure sustainable management and use of natural resources and waste;
- Reduced production costs, thus improving the competitiveness of the European graphics sector.

LIFE09 ENV/ES/000499
SustainGraph



Beneficiary:

Type of beneficiary

Professional organisation

Name of beneficiary

Asociación Industrial de Óptica, Color

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Name of contact person

Susana OTERO BELTRÁN

Duration of project:

36 months (01/01/2011 - 31/12/2013)

Total budget in euro:

1,383,813.00

EC contribution in euro with %:

691,906.00 (50.00 %)

Generic theme:

Integrated environment management

The project hopes to encourage the development of a more sustainable graphics industry. It also hopes to increase SMEs' compliance with both the Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) principles and the Environmental Compliance Assistance Programme for SMEs (ECAP).

Expected results

- Identified best practices for new sustainable graphics products and services;
- An online eTool for life-cycle assessments of graphic products;
- A 10% improvement in the environmental performance of the European graphics industry;
- Improved SME compliance with SCP/SIP and ECAP

Design and development of a demonstrative pilot plant for the recycling of polyvinyl butyral (PVB)

Project background

Every year in Europe about 480 000 tonnes of waste laminated glass comes from end-of-life vehicles (ELVs). Laminated glass is about 3% of the total material of a vehicle. Currently, most of this glass is incinerated or buried and only a fraction is recycled.

Polyvinyl butyral (PVB) is a resin used for applications that require strong binding, including the production of laminated glass in automobile windscreens. Current efforts to recycle PVB from the windshields of ELVs have had limited success as the technologies used do not provide a sufficient degree of purification of the plastic. The lack of purity of the recycled PVB means that it has only been possible to use it in lower quality applications, such as tiles, carpets, sound insulation and mixing with bitumen.

Project objectives

The Recycled-PVB project aims to develop a pilot plant to demonstrate the purification of PVB from laminated glass. The overall objective is to help find a practical and sustainable use for waste glass from vehicles.

The project will develop knowledge about the specific equipment and technical characteristics required for washing, grinding and processing PVB. It will also examine the requirements of PVB within the automotive and building sectors, among others.

Based on laboratory work, the project will define and develop a coherent process at semi-industrial scale to obtain PVB from recycled laminated glass. The plant is expected to be operated at a scale that will produce 20kg of recycled PVB per hour.

The project hopes to show the technical and economic feasibility of both PVB recycling and its subsequent use in manufacturing laminated glass. The target is to achieve costs of only €4 or €5 per kg of recycled PVB, compared to the current industrial costs of between €9 and €13 per kg. The costs of ELV storage and disposal will also be reduced.

The environmental benefits will include a reduction in the amount of material sent to landfill, reduced GHG emissions from incineration of waste PVB, and reduced demand for virgin PVB with its associated life-cycle

LIFE09 ENV/ES/000501
RECYCLED-PVB



Beneficiary:

Type of beneficiary

Research institution

Name of beneficiary

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Claudio FERNÁNDEZ

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

1,150,522.00

EC contribution in euro with %:

480,236.00 (41.74 %)

Generic theme:

End-of-Life Vehicles (ELVs) and tyres

environmental impact. The project will contribute to compliance with European Directive 2000/53/EC, targeting 95% recovery of ELVs by 2015.

Expected results

- A pilot semi-industrial-scale plant for recycling PVB from laminated glass;
- Demonstrated application of recycled PVB as a replacement - in whole or in part - for virgin PVB in laminated glass; and
- Reduced landfill and incineration of PVB waste.

Radio-electric Governance: environment and electronic communication policies for deployment of radiocom infrastructures

Project background

The EU considers that exposure to electromagnetic fields (EMF) presents a risk to public health. In 1999, it produced a recommendation (1999/519/EC) providing a common framework for achieving a high level of public protection from the possible harmful effects of exposure to EMF, in particular non-ionising radiation.

Non-ionising radiation is any type of radiation that moves electrons to a higher energy state when passing through matter without completely removing an electron from an atom or molecule to produce charged ions. Different biological effects have been observed and there are varying opinions on the possible effects on human health.

Local councils generally do not have sufficient information to adequately assess the risks, and thus develop effective policies to protect citizens against the effects of electromagnetic 'pollution'. In some cases, this has led to the paralysis of processes to grant licences for electromagnetic emitters such as mobile telephone stations. The public has also been left uncertain about the potential dangers of radio frequency installations in their areas.

Project objectives

The main objective of the Radio-electric Governance project is to increase information and understanding of EMF generated by radio communication stations.

The project will draw up an inventory of radio communication infrastructure across the Catalan region with equivalent isotropically radiated power (EIRP) over 10 watts. EIRP is the amount of power that a theoretical isotropic antenna which distributes power evenly in all directions would emit.

It will monitor and evaluate the continuous and occasional EMF generated by this infrastructure, thus providing much greater clarity for both local authorities and the general public about their strength and impact on health.

The project will develop protocols for action where an installation does not comply with current regulations. The work of the project will also inform appropriate amendments, where appropriate, to these Catalan regulations.

LIFE09 ENV/ES/000505
Radio-electric Governance



Beneficiary:

Type of beneficiary

Public enterprise

Name of beneficiary

Centre de Telecomunicacions I Tecnologies de la Informació

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Antoni TORREDEMÉR PALAU

Duration of project:

48 months (01/09/2010 – 31/08/2014)

Total budget in euro:

2,681,322.00

EC contribution in euro with %:

1,167,423.00 (43.54 %)

Generic theme:

Other area – Impact of economic activities

The beneficiary will develop a Plan of Environmental Distribution of Radio Communication Infrastructures in rural areas to facilitate their ordered deployment. This should improve access to wireless communications, whilst guaranteeing the protection of human health and the environment and allaying public concerns.

Expected results

- An inventory of EMF emitting infrastructures in Catalonia;
- Protocols for action for non-compliant emitting infrastructure;
- Plan of Environmental Distribution of Radio Communication Infrastructures in rural areas in Catalonia; and
- Reduced public concern about EMF.

Creation Of A New Network for Electric Cars Technology

Project background

The transport sector is one of the main sources of CO₂ emissions in the EU. Passenger-car use accounts for about half of the overall CO₂ emissions generated by the transport sector, representing 12% of the total CO₂ emissions in the EU and 13% in Spain.

The number of cars on EU roads has tripled in the past 30 years, increasing at a rate of around 3 million vehicles per year.

Reducing emissions of greenhouse gases (GHGs) and their impact on climate change is one of the greatest policy priorities of the European Union. In 2000, the average CO₂ emissions for passenger cars was 186g CO₂/km. The EU objective is to limit this to 130g CO₂/km by 2012

Project objectives

The main objective of the CONNECT project is to promote the progressive deployment of electric vehicles as an alternative means of urban mobility.

The innovative project will establish a pilot network of five 'zero-emission' electric recharging points for electric vehicles. These points will be fully fuelled by renewable energy and should provide a 75% more favourable 'global ecologic balance' than recharging from the mains supply.

To further incentivise the use of the system, the project will provide 50 electric vehicles to staff of targeted organisations and offer free or subsidised recharging. The project thus hopes to contribute to overcoming some of the technical, economic and practical barriers to using this 'clean transport' alternative for medium-distance journeys in urban areas.

The project will demonstrate approaches to cost-efficient emissions reductions by validating the recharging point system. It will set a benchmark for the transition to electric vehicles and establish an EU network of enterprises and institutions committed to this technology.

Expected results

- Installation of a network of zero-emission' electric recharging points;
- Introduction of more than 50 electric vehicles;

LIFE09 ENV/ES/000507
CONNECT



Beneficiary:

Type of beneficiary

Training centre

Name of beneficiary

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Susana LACALZADA DEL BUSTO

Duration of project:

36 months (01/09/2010 - 31/08/2013)

Total budget in euro:

2,029,092.00

EC contribution in euro with %:

921,970.00 (45.44 %)

Generic theme:

Urban design – Quality of life – Transport planning

- Validation of the added value of the electric vehicle system; and
- Reduction of CO₂ emissions by 200 tonnes/year.

Green citizens of Europe - Innovative tools and methods for interactive and co-creative citizens

Project background

Growing cities and changing lifestyles demand an ever increasing supply of natural resources. However, city managers have the opportunity and the means to drive forward change and reduce the negative impacts of urban development, such as urban sprawl and the growing demand for car-based urban transport. This can be done by developing and implementing new policies for urban planning, urban design, housing and local transport that offer new opportunities for more sustainable lifestyles and quality of life. European policies on climate change and sustainable development identify the urban environment as a specific target area (6th Environmental Action Programme). Energy use, greenhouse gas emissions, noise and air pollution are some of the key problems that have to be addressed.

Project objectives

The overall objective of GREECIT is to demonstrate how environmental policy can be interpreted and implemented in the form of concrete, citizen-oriented actions, which motivate and help people to change their behaviour. Three specific settings have been selected for the project:

- Individual apartments in residential areas;
- Common waste management areas in residential blocks; and
- An intra-city-region mobility system.

Within these settings the project will set up a number of actions, which aim to demonstrate methods and techniques that inspire and motivate people to change their behaviour and become part of a process to develop more sustainable city management policies and governance.

Expected results

- A decrease of 10% in energy consumption for electricity and hot water in the study apartments in comparison with reference apartments;
- Increased awareness of waste management and environmental behaviour as a result of demonstration actions;
- Comparative scores on the efficiency of proposed methods for sustainable intra-city-region mobility and their effect on the urban environment;

LIFE09 ENV/SE/000346
GREECIT



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

City of Umeå

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Name of contact person

Johan SANDSTRÖM

Duration of project:

54 months (01/10/2010 - 31/03/2015)

Total budget in euro:

2,670,112.00

EC contribution in euro with %:

1,301,652.00 (48.75 %)

Generic theme:

Urban design – Quality of life – Transport planning

- An increase in the numbers of people jointly commuting in the region and hence a decrease in greenhouse gas emissions; and
- An increase in the number of people commuting by bicycle.

Climate friendly health and care

LIFE09 ENV/SE/000347
CLIRE



Project background

The health sector will play a crucial role in reducing the impact of climate change on health. However, the impact of hospitals themselves on the climate and the environment is not being adequately addressed by the EU. Hospitals and other healthcare units are energy and resource intensive, which indirectly affects human health by contributing to climate change. The healthcare sector in Skåne is responsible for CO₂ emissions of more than 73 000 tonnes/yr. This suggests that the healthcare sector in the EU is responsible for millions of tonnes of CO₂ emissions every year.

Project objectives

The CLIRE project brings together many different actions to show ways of dramatically reducing the carbon footprint of the health sector in Skåne. These actions will be in line with EU objectives in relation to climate change, in particular the objectives of increasing the contribution of renewables to 20% of total energy supply and reducing carbon dioxide emissions by 20%, both by 2020.

Specific objectives of the project include:

- To improve the procurement system so that products with a low carbon footprint will have a better chance of winning public tenders;
- To establish a demonstration facility (the sustainable treatment room) and a working methodology that can be employed by health clinics;
- To increase the use of energy from renewable energy sources and refurbish a hospital building using climate-smart technology; and
- To transform a number of buildings used for primary healthcare into demonstration sites. Actions will be implemented in order to reduce energy demand and the heating systems will be transformed so that each building will use locally-produced renewable energy sources.

Expected results

- Testing and demonstration of a climate-smart procurement model;
- The creation of a climate-smart treatment room and adoption of climate-smart work practices;
- A reduction in the carbon footprint of a hospital building by 50%, by reducing the consumption of energy from fossil fuels and increasing energy efficiency;

Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

Region Skåne

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Name of contact person

Kristina DE GEER

Duration of project:

60 months (01/09/2010 – 31/08/2015)

Total budget in euro:

2,603,503.00

EC contribution in euro with %:

851,751.00 (32.72 %)

Generic theme:

Reduction of emission of greenhouse gases

- Improved work practices and physical investments as a result of the climate-smart primary healthcare demonstration unit;
- A primary healthcare unit supplied with 100% renewable energy sources; and
- A reduction in the carbon footprint of each of the participating healthcare units by 50%.

Biogas Skåne – an energy system creating sustainable development by combating climate change

Project background

Despite technological advances and environmental benefits, the use of biogas as an energy source is still limited. To optimise its environmental and economic benefits a systematic approach to biogas production and consumption is needed. In certain situations, biogas is a cost-efficient and environmentally-friendly option for both energy production and consumption.

Project objectives

The overall aim of the project is to demonstrate the potential of biogas to become a major contributor to energy production in Europe and an important tool in mitigating greenhouse gas (GHG) emissions. To encourage decision-makers, entrepreneurs and other stakeholders in the EU to support an increase in biogas production and consumption, BIOGASSYS will demonstrate a sustainable system for biogas production and provide solutions and best practices that can be used to combat critical stages of the biogas lifecycle.

Specific objectives include:

- To demonstrate methods to incorporate by-products, waste and other biomass into biogas production;
- To demonstrate innovative applications of biogas (e.g. as a dual fuel supply in freight vehicles, as a fuel for ferries and tractors, and for generating electricity in private homes);
- To demonstrate alternative commercially-viable uses for by-products of biogas production (for instance, sludge) such as for bio-fertilisers for agricultural use;
- To demonstrate partnership models to involve businesses and other organisations in biogas production and use; and
- To demonstrate methods and tools that encourage and enable new biogas producers.

Expected results

- A total reduction in CO₂ emissions of 180 000 tonnes;
- An increase in biogas production of 500 GWh in Skåne;
- An increased interest in biogas production and the establishment of five new production plants;
- An increase in the consumption of biogas, with 3 000 more biogas fuelled vehicles on the market;

LIFE09 ENV/SE/000348
BIOGASSYS



Beneficiary:

Type of beneficiary

Public enterprise

Name of beneficiary

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Anna HANSSON

Duration of project:

60 months (01/09/2010 – 01/09/2015)

Total budget in euro:

2,846,312.00

EC contribution in euro with %:

1,307,741.00 (45.95 %)

Generic theme:

Reduction of emission of greenhouse gases

- A 100% increase in the number of applications for biogas in Skåne;
- A guide to the sustainable production and consumption of biogas aimed at investors and decision-makers; and
- A GIS-based tool for planning and modelling biogas production plants, based on technological, economic and environmental criteria.

Climate Living in Cities Concept

Project background

Climate change is one of the four priority areas in the Sixth Environmental Action Programme of the European Community 2002-2012 (6th EAP). The EU has set challenging targets for 2020 to combat climate change and introduce adaptation measures.

EU greenhouse gas (GHG) emissions correspond to 4.2 billion tonnes of carbon dioxide (CO₂) equivalents. In 2006, Sweden accounted for 51 million tonnes. Since 1990, industrialised countries have reduced emissions by 2%. However, this limited reduction is exceeded by increasing emissions in developing countries, which doubled in quantity between 1990 and 2005, to 13.6 billion tonnes of CO₂ equivalents (UN MDG report).

Together, housing, transport, and food and consumer goods are responsible for 70-80% of life-cycle environmental impacts in Sweden. In general, however, efforts to reduce carbon emissions target these sectors separately.

Project objectives

The project, Climate Living in Cities Concept (CLICC), will demonstrate a concept for targeting citizens, as household occupants, to reduce their carbon footprint in the areas of housing, transport, and food and consumer goods. It seeks to reduce the carbon footprint of the city's inhabitants by 50% and thus contribute to the wider EU objective of combating climate change.

CLICC will operate through a combination of technical measures and behavioural incentives: technical measures in buildings will reduce total CO₂ emissions by 15%; the project will reduce energy consumption for heating and hot water usage by 15%, renewable energy from solar collectors will reduce consumption of external energy by 1%, and a demonstration green facade and green roof will be introduced on a demonstration building.

The project will lead to a 30% reduction in water consumption, reduced car transport for short journeys, and the elimination of household waste going to landfill. It will introduce a storm-water system that will reduce water run-off in the streets and on pavements.

LIFE09 ENV/SE/000350
CLICC



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Dagmar GORMSEN

Duration of project:

60 months (01/09/2010 - 31/08/2015)

Total budget in euro:

4,352,235.00

EC contribution in euro with %:

1,369,867.00 (31.48 %)

Generic theme:

Reduction of emission of greenhouse gases

The programme should also significantly reduce household bills and increase the attractiveness and market value of the city's real estate.

The project aims to demonstrate that local governments are important actors when it comes to combating climate change and that, together with residents, they can achieve a significant reduction of GHG emissions. The project expects to engage the active participation of 70% of Malmö's households.

Expected results

- A 50% reduction in the carbon footprint of participating households;
- A reduction equivalent to 106 100kg/yr of CO₂; and
- A saving of 981 100 kWh/yr.

Mare Purum - Prevention of Marine Fouling on Commercial Shipping and Leisure Boats with a Non Toxic Method

Project background

Marine fouling is a generic term for algae and molluscs attaching to and developing on a ship or marine installation. The fouling increases friction between the ship and the seawater, resulting in increased fuel consumption, and thus increased emissions of SO_x, NO_x and CO₂. To minimise this problem, ships have traditionally been painted with toxic hull paint - approximately 80 000 tonnes/yr of conventional antifouling paint is used worldwide. The hull paint presently used on most commercial vessels contains heavy metals. The paint works by continuous polishing of the surface and the release of a biocide. The result is a slow leakage of heavy metals into the seawater, poisoning the whole ecosystem. The International Maritime Organisation (IMO) agreed a ban on tributyltin-based paints (conventionally used to protect against marine fouling) in 2001.

Project objectives

The main objective of the LIFE project is to demonstrate the long term reduction of marine fouling using an environmentally-friendly hull paint, based on Ekomarine's patented technique. The project will be performed in waters with varying salinity, temperature, depth, and other conditions.

Specific objectives include:

- To demonstrate the long term effectiveness of Ekomarine's hull paint on commercial ships, leisure boats and test panels; and
- To distribute the project results within Europe and to other regions.

Expected results

The project is expected to lead to the following primary quantitative environmental results:

- A reduction in leakage of poisonous heavy metals and other toxins by 100% in vessels to which the new paint is applied;
- A yearly reduction of 50 000 tonnes of poisonous heavy metals (TBT/copper/zinc) leaking into the seabed; and
- Protection against marine fouling over 12 months while still maintaining oxygen depletion below 20%.

LIFE09 ENV/SE/000351
Mare Purum



Beneficiary:

Type of beneficiary

Large enterprise

Name of beneficiary

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Duration of project:

42 months (01/09/2010 - 28/02/2014)

Total budget in euro:

1,800,673.00

EC contribution in euro with %:

886,211.00 (49.22 %)

Generic theme:

Risk assessment – Pollution control

Pure Energy Separator – Innovative Centrifugal Separator Technology for Energy Recovery and Oily Waste Volume Reduction

Project background

Some 5 million tonnes of base oils were consumed in Europe in 2000. Around 50% of these are lost during use and the remaining 50% represents the total collectable waste oil. The global shipping industry, comprising vessels over 400 gross tonnes (approx. 60 000 vessels), consumes 410 million tonnes/yr of fuel oil. Some 0.5% of this fuel is lost during the process of separating the oil from dust particles. During this process the discarded oil is mixed with water and stored in sludge tanks for further treatment. This waste oil is usually incinerated on board the vessel or on shore.

Project objectives

The overall objective of the project is to demonstrate and evaluate a new, innovative continuous ejection technology, based on a new method of expelling sludge from a separator. The system does not require any process water and therefore the sludge will be concentrated and dry, with the result that more than 90% of the waste oil can be reused. The volume of oil going for incineration will then be reduced, which is in line with the objectives of the Directive for the Disposal of Waste Oils (75/439/EEC).

Expected results

In the shipping industry:

- Successful installation and demonstration of the prototype in 16 selected vessels;
- 0.5% reduction in fuel consumption;
- 95% of oil in soiled water to be reused as fuel;
- A 90-98% reduction in volumes of oily waste generated from the cleaning of fuel and lube oil;
- A €200 000/yr reduction in the cost of operating large container vessels; and
- A 2 250-tonne/yr reduction in CO₂ emissions from large container vessels.

In the mechanical industry:

- Successful installation and demonstration of the prototype in mechanical industries;
- An 85-95% reduction in volumes of waste oil produced from the use of coolants;
- A 1 000% increase in the lifespan of the coolant, leading to a 90% reduction in the consumption of coolant;
- A reduction of more than 90% in CO₂ emissions created from the incineration of sludge; and

LIFE09 ENV/SE/000352
Pure Energy Separator



Beneficiary:

Type of beneficiary

Large enterprise

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Tomas OLDEBÄCK

Duration of project:

34 months (01/09/2010 – 30/06/2013)

Total budget in euro:

3,107,979.00

EC contribution in euro with %:

1,438,989.00 (46.30 %)

Generic theme:

Clean technologies

- A €750 000/yr reduction in the operational costs of a large mechanical firm.

DYEMOND SOLAR – Innovative Technology for Low Cost Production of Energy Efficient Dye-Sensitized Solar Cells

Project background

Power generation constitutes 20-25% of CO₂ emissions and is therefore a main focal point in attempts to reduce such emissions. The global solar energy resource is about one thousand times larger than any other carbon-free energy source. The additional annual demand for carbon-free energy could, for example, be provided by just 1.5 hours of global irradiation from the sun. However, sunlight has to be converted into a useable energy form at a reasonable cost. Building Integrated Photovoltaics (BIPV) is one of the most promising technologies for achieving this. Photovoltaic (PV) technologies have shown an impressive exponential growth of approximately 40%/yr during the last decade.

Project objectives

The overall objective of the project is to demonstrate a cost-effective means of producing transparent dye-sensitised solar cells (DSCs), based on a patented technology that uses one-dimensional photonic crystals (1DPCs) to improve the efficiency and colour of solar cells. The demonstrated prototype production system will be a pre-industrial-scale system, i.e. a fully functional production line, which will serve as a base model for an industrial-scale operation.

Expected results

The NLAB Solar technology will lead to the following quantitative environmental improvements when compared with the current state-of-the-art technology:

- A 30% reduction in production costs;
- A 50% reduction in embedded energy from production;
- A 40% reduction in CO₂ emissions in comparison with silicon solar cells;
- A 20% reduction in the volume of waste produced;
- A 50% reduction in investment and operational costs;
- A 50% reduction in storage, transportation and handling costs; and
- A product that is 50% recyclable and therefore has a lower carbon footprint.

LIFE09 ENV/SE/000355
DYEMOND SOLAR



Beneficiary:

Type of beneficiary

Small and medium-sized enterprise

Name of beneficiary

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Giovanni FILI

Duration of project:

40 months (01/09/2010 - 31/12/2013)

Total budget in euro:

3,522,312.00

EC contribution in euro with %:

1,735,846.00 (49.28 %)

Generic theme:

Reduction of emission of greenhouse gases

Implementing ECAP through a Sustainable Supply Chain Management (SSCM) led approach to Green Public Procurement

Project background

Small and Medium-sized Enterprises (SMEs) make up a large part of Europe's economy. There are 23 million SMEs in the EU, which represent 99% of all enterprises and 57% of value added.

The precise contribution of SMEs to pollution and other environmental impacts is not well-known. However, it is understood that SMEs find it harder to comply with environmental legislation than their larger counterparts. A survey conducted in 2005 by the UK Environment Agency of over 5 000 British SMEs found that 75% did not have an environmental policy and only 6% had an Environmental Management System in place.

A number of EU and Member State-level initiatives are encouraging local authorities to reduce their CO₂ emissions and improve the sustainability of their own operations and of their localities. However, budgetary restrictions are causing significant pressures for efficiency savings in the delivery of public services.

In many cases, these pressures are resulting in public-sector organisations adopting top-down, compliance-based sustainable procurement models, which simply put in place minimum quality standards for suppliers. These tend to favour large 'prime contractor' suppliers and fail to encourage genuine CO₂ reductions in the supply chain. They do not incentivise improvements in the environmental performance or sustainability of local SMEs.

Project objectives

The SSCM4ECAP project aims to develop an innovative 'bottom-up' approach to Green Public Procurement. It will demonstrate the use of supply-chain strategies to improve environmental performance of local SMEs and achieve local authority sustainability targets.

The beneficiary will monitor and evaluate the effectiveness of current implementation of environmental policy and legislation. It will then prepare an Environmental Compliance Assistance Programme (ECAP) for SMEs in the local authority supply chain to encourage them to implement sustainable business practices.

A key tool the project will harness to achieve this will be to increase the uptake and implementation by SMEs of appropriate Environmental Management

LIFE09 ENV/UK/000021
SSCM4ECAP



Beneficiary:

Type of beneficiary

Local authority

Name of beneficiary

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Neil GIBSON

Duration of project:

40 months (01/09/2010 - 31/12/2013)

Total budget in euro:

1,717,395.00

EC contribution in euro with %:

856,777.00 (49.89 %)

Generic Theme:

Ecolabelling – Eco-market – Consumer awareness – Green public procurement

Systems (EMS), such as Acorn or EMAS–Easy. These will enable the SMEs to improve their environmental performance and increase their access to public procurement contracts.

For the long-term, the project hopes to improve public-sector understanding of the impact of implementing EMS in their supply chains on the overall environmental performance of the locality.

Expected results:

- Demonstration of a sustainable, bottom-up approach to green public procurement;
- 30 companies participating in peer learning around EMS;
- 25 SMEs gaining EMAS or Acorn accreditation; and
- A positive impact towards achieving local carbon reduction targets.

Electronic Duty of Care

Project background

The UK Environmental Protection Act (1990) states that producers of waste have a legal 'Duty of Care' to take all reasonable steps to keep waste safe. The Duty of Care applies to everyone involved in handling the waste, from those who produce it, to those who finally dispose of it, or recover it.

Respect for this legally enforceable duty is controlled and demonstrated using Waste Transfer Notes (WTN). These must be completed - describing the type and quantity of waste and how it is packaged - and signed by both the sender and receiver of the waste. WTNs must accompany any transfer of waste between different parties and be kept for scrutiny for six years.

This regulatory paper-based system currently produces at least 25 million WTNs/yr in the UK, leading to archive paper storage for some 150 million paper WTNs. This is a relatively inefficient and complicated process for both waste-chain stakeholders and regulators, not to mention the associated environmental costs.

Project objectives

The Electronic Duty of Care (EDOC) project intends to develop a national, Internet-based interface to record the collection, transportation, treatment and disposal of waste materials. This aims to enable the monitoring and mapping of waste management without creating a mountainous paper trail.

The national framework will be designed by the beneficiary with input from selected waste-chain stakeholders on issues around, for example, the accessibility of the Internet-based interface. Businesses should be able to move to the EDOC system in 2012.

Using the system should demonstrate improved quality and reliability of waste data and create a more streamlined system for producers, brokers, carriers, receivers and regulators of waste, who will be able to refer to and agree the same digital information, rather than creating multiple paper records.

The system will also provide greater accessibility to real-time data on waste movements. This will enable waste producers to track the treatment and disposal of

LIFE09 ENV/UK/000023
EDOC



Beneficiary:

Type of beneficiary

National authority

Name of beneficiary

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Name of contact person

Martin BROCKLEHURST

Duration of project:

47 months (10/01/2011 - 18/12/2014)

Total budget in euro:

4,176,500.00

EC contribution in euro with %:

2,088,250.00 (50.00 %)

Generic Theme:

General – Waste management

their waste, providing more security against unauthorised activity in waste disposal. It will similarly allow for relatively easy benchmarking of waste management performance for those in the waste chain and facilitate the identification of opportunities for waste prevention, recovery and recycling throughout the life-cycle of the waste.

Expected results

- The creation of a national Electronic Duty of Care (EDOC) monitoring system;
- The replacement of more than 18 million paper WTNs/yr by 2015; and
- The identification of opportunities for prevention, recovery and recycling of waste.

Improving Guidance on Regulations for Enterprise and the Environment

Project background

Small and medium-sized enterprises (SMEs) make up more than 99% of the four million UK businesses. They generate over 60% of the waste and contribute to more than 50% of the pollution incidents - an average of 37 000 per year - in the UK.

Business surveys show that fewer than 10% of UK businesses believe they have the potential to cause pollution incidents. However, the real figure is more like 60%. As long as the majority of businesses believe their business is not part of the problem, they will not seek solutions.

Regulatory guidance for businesses is often complex and inconsistent, resulting in information overload and an unnecessary administrative burden. The beneficiary believes that these factors and the associated lack of clarity about key messages being conveyed prevent businesses from becoming more pro-environmental. The NetRegs website (www.netregs.gov.uk) has already been cited as European best practice - DG Enterprise BEST project 2006 - for its innovative approach to delivering practical, sector-specific, environmental guidance to businesses across the UK.

Project objectives

The iGREEN project will demonstrate how environmental guidance for SMEs can be taken to the next level by developing joined-up service provision through the NetRegs website. The project thus hopes to positively influence the environmental behaviour of a wider SME audience and yield enhanced environmental outcomes.

The project will deliver innovative solutions around intelligence gathering, product creation, and dissemination of environmental information and messages through multimedia and multiple channels. Tools will include a legislation generator for Environmental Management Systems (EMS) and environmental e-Learning tools for six different industries.

To engage businesses in really improving their environmental behaviour, guidance needs to be not only well-written, but also delivered in a way that is clear, accessible and easy to use. Therefore iGREEN will de-

LIFE09 ENV/UK/000024
iGREEN



Beneficiary:

Type of beneficiary

Regional authority

Name of beneficiary

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Martin BROCKLEHURST

Duration of project:

36 months (01/11/2011 - 31/10/2013)

Total budget in euro:

5,272,074.00

EC contribution in euro with %:

2,597,037.00 (49.26 %)

Generic Theme:

Integrated environment management

velop these tools in a package of linked interactive products and services on the NetRegs website.

To facilitate and encourage use of the system by SMEs, the project will develop user personalisation on the NetRegs website, the ability to deliver key checklists to users' mobile phones, a video-streaming facility and a pilot customer-intelligence system. The project thus hopes to extend outreach to a wider business community and to maintain its engagement.

Expected results

- Delivery of an innovative range of joined-up products and services to SMEs through the NetRegs website; and
- Improved knowledge and engagement by SMEs around key environmental messages.

Hydropower Sustainability Assessment Protocol: EU Assessments, Monitoring, Capacity Development and Outreach

Project background

Hydropower developments can help mitigate climate change, manage hydrological cycles and provide improved energy security. In this context, the sustainability of hydropower is fundamental. The IHA has produced sustainability guidelines and a sustainability assessment protocol to promote wider uptake of hydropower. These are based on lifecycle approaches to sustainability, covering hydropower projects/schemes from 'cradle-to-grave'. These existing IHA tools are being strengthened by the introduction of a new Hydropower Sustainability Assessment Protocol (HSAP), which addresses hydropower sustainability considerations from a cross-sectoral stakeholder perspective.

Project objectives

The main aim of this project is to demonstrate the effectiveness of the HSAP in the EU and consolidate knowledge on hydropower sustainability performance throughout the Union. The project also aims to raise awareness and build capacity (primarily via an electronic outreach campaign) about the HSAP and hydropower sustainability performance in the EU among all relevant stakeholders, including Member State/EU regulators and policy-makers.

Expected results

- Improved knowledge among key players (hydropower operators/developers and environmental auditors, as well as other stakeholders, regulators and policy-makers) about HSAP and hydropower sustainability performance, leading to improved hydropower sustainability performance in the EU; and
- Increased capacity among key players about HSAP and hydropower sustainability.

LIFE09 ENV/UK/000026
Hydro4LIFE



Beneficiary:

Type of beneficiary

Professional organisation

Name of beneficiary

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Richard TAYLOR

Duration of project:

36 months (01/09/2010 - 01/09/2013)

Total budget in euro:

1,283,637.00

EC contribution in euro with %:

641,818.00 (50.00 %)

Generic Theme:

Clean technologies



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